PENSION POLITICS:
PARTISAN INFLUENCES ON PUBLIC SECTOR PENSIONS

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ABSTRACT

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This dissertation seeks to answer three broad questions. First, what can be said about the relationship between states' political environments and public sector pension funding? Using panel data, I investigate the role of partisanship, ideology and other political and economic factors as determinants of the division of costs between public employees and state governments and the long-term funded status of pension plans. Empirical results suggest that cost sharing is not affected by state politics, but that Democratic legislative partisanship and citizen liberalism depressed long-term public sector pension funding over the previous decade.

Second, to what extent is the evolution from traditional pensions to defined contribution accounts in the public sector driven by partisanship? I find that Republican legislative partisanship and growth in state indebtedness are significant predictors of whether or not a state will implement such accounts. There is no evidence of pressure from the state governor, annual revenue changes or labor unions. These results clarify some of the factors which contribute to the complex public sector pension climate across the states.

Third, what are the costs and implications of defined contribution accounts for public sector employers and employees? In 1997, Michigan began enrolling new state employees in a 401(k) plan but maintained an existing pension for previous hires, making the state an excellent case study for the comparative costs of each program. Results suggest Michigan's 401(k) plan presents lower, more stable annual costs relative to the pension plan, although this has not always

been the case. Pension liability growth slowed following implementation of the 401(k) plan, but unfunded pension liabilities remain. Michigan's failure to remit full annual pension contributions and the state's use of pension funds for non-retirement purposes complicates cost determinations, and eventual benefit levels of the 401(k) plan are uncertain.

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CHAPTER 1:

INTRODUCTION AND OVERVIEW

1.1 PUBLIC SECTOR PENSIONS IN HISTORICAL AND POLITICAL CONTEXT

On July 14, 1870, the United States Congress directed Secretary of the Interior Jacob Dolson Cox, a Republican, to issue a $3,000 annual retirement pension to a 52-year old war widow of some contemporary notoriety, a pension worth the equivalent of approximately $54,000 in 2012 dollars. The award necessitated a literal act of Congress because the woman was not a "war widow" in the conventional sense. Her husband had not engaged in combat during the Civil War and, as a result, his heir did not qualify for the income support provisions enacted by Congress for the benefit of Union soldiers and their families. Nevertheless, the widow's husband had provided substantial administrative support to the war effort and the nascent reconstruction period, and the widow believed this entitled her to a certain level of benefits in the wake of his passing.

She initiated what would become a two-year lobbying effort and soon gained notable supporters, including anti-slavery Republican Senator Charles Sumner and former Secretary of War Simon Cameron.[1] But the issue provoked resistance among some congressional Democrats, who were weary of elevating the widow's husband to an implied favored status by

[1] Cameron was truly bipartisan; at various points in his life, he belonged to the Whig, Democratic and Republican parties.

granting her pension request. The measure eventually passed along party lines and the widow, former First Lady Mary Todd Lincoln, was added to the United States federal government's growing pension roll.

Nearly a century and a half later, the conferral of retirement pensions to public employees seldom requires protracted congressional debate. This comes as little surprise, given significant evolution in the United States' pension environment since the close of the Civil War. In part, these changes are a consequence of the increasingly-complex, diffuse public sector pension system. Whereas the earliest public pensions, those awarded to Civil War veterans, resulted from federal legislation and financing and the near-complete absence of any viable alternative private retirement savings vehicle (Costa 1998; Grabner 1980; Skocpol 1992), more recent conflicts in the field have devolved, like so many other issues, to state and local governments.[2] Many state and municipal pension plans, intended to benefit local public safety workers and school teachers, were initiated in the late-19th and early-20th centuries (Clark, Craig, and Wilson 2003; Conover 1921; Sterett 2003) and have since grown to amass trillions of dollars in assets, substantial political power and growing entanglement with annual budgets, all while providing retirement income to millions of individuals.

The nature of public sector pension conflicts has also shifted. Whereas elected officials and other public administrators were formerly occupied with which group(s) should be awarded benefits, and how generous those benefits should be, much attention is presently directed instead

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[2] One recent exception is a report from the federal Defense Business Board, which recommended in 2011 that the United States military replace the existing traditional pension plan for service members with a defined contribution plan. The objective of such a policy shift is a reduction in annual costs and long-term liabilities for the Department of Defense.

toward fiscal concerns. This includes the consequences of public sector pensions for the short- and long-term fiscal sustainability of sponsoring governmental bodies, the antecedents of current funding differences and the "funding gap," and the comparative cost of alternative retirement plans such as defined contribution, 401(k)-style accounts offered throughout the private sector.

Amid a changing policy landscape, however, the issue of public sector retirement benefits has not lost its polarizing character. In early 2011, before collective bargaining rights rose to prominence as a key area of disagreement, protesters at several state capitols nationwide argued passionately in favor of and against established pension benefits for public sector employees. Many of those protestors and some of their sympathizers suggested that public sector compensation, going beyond base wages to include the value of post-employment benefits such as retirement pensions, were subject to political influence. Popular commentary cast the political parties in no uncertain terms; Democrats were typically characterized as "good" for public sector labor unions, for the pensions those labor unions bargained for in decades removed and for the individuals who benefit from those pensions. In contrast, Republicans—particularly governors—were described as anti-union, anti-pension and anti-public sector. For their part, some elected officials from each party made public statements that echoed this otherwise simplistic dichotomy. Some state Democrats championed their efforts to "protect" public employee benefits while Republicans fashioned themselves as working to "protect" taxpayers.[3] Perhaps unknowingly, this narrative echoed a robust theme throughout the public policy literature – that a states' political

[3] The simplicity of the narrative forsakes a great deal of accuracy. Not only did a number of Republican governors take no significant action where public sector pensions were concerned, some of their Democratic (e.g., New York Governor Andrew Cuomo) and Independent (e.g., Rhode Island Governor Lincoln Chafee) peers worked to implement benefit freezes or openly advocated 401(k)-style accounts.

characteristics often do, in fact, have an impact on policy output – while suggesting that policymakers may harbor conflicting orientations toward taxpayer-funded social provisions that solely benefit public employees.

1.2 LIMITATIONS OF EXISTING SCHOLARSHIP ON PUBLIC SECTOR PENSIONS

Thanks in part to protests and special elections in Wisconsin, Ohio, California and other states and municipalities, and the national conversation initiated in the wake of those events, curiosity about public sector pensions is no longer singly consigned to activists, budget agency bureaucrats and curious scholars. The degree of cost sharing between governmental bodies and the public sector workforce, the level of benefits conferred in retirement by public sector pensions and the normative debate over entitlements and the role of government have been discussed on television news programs, newspaper editorial pages and at labor union halls alike. Public sector pensions enjoy heightened and growing visibility among at least three audiences: the taxpaying public, which bares ultimate financial responsibility for benefit costs; public employees, who depend on pensions to support a certain standard of living in retirement; and the policymakers situated in between.

Increased salience of pensions has amplified demand for analysis on all aspects of these retirement programs, especially their political and fiscal dimensions. Several questions have been raised and considered. From a political perspective, are there ideologically-motivated biases in the funding of public sector pension plans? Is the public sector's slow but sure movement away from traditional pensions toward employee-directed defined contribution accounts driven by the

partisanship and/or ideology of state policymakers? And from a fiscal perspective, what role do a state's budgetary conditions play in pension funding and the enactment of pension alternatives? Do defined contribution accounts, often sold on their fiscal prudence, actually yield reduced costs to sponsoring public sector units? And what ancillary considerations are involved with such an approach to pension reform?

Much of what has been supplied in response to these questions misses the mark. Scholars working in disciplines linked to pension and retirement issues have traditionally examined nearly every aspect except the politics of public sector pensions. For example, multiple scholars have taken the most obvious approach, linking pension funding to economic and budgetary trends (Epple and Schipper 1981; Novy-Marx and Rauh 2009; Peng 2008; cf. Inman 1981). Other studies have found that 401(k) accounts in the private sector tend to lower employer benefit costs (Ghilarducci, Sun, and Nyce 2004; Ghilarducci and Sun 2006) but may or may not yield a comparable level of retirement income relative to traditional defined benefit pensions (Poterba, Venti, and Wise 2007; Samwick and Skinner 2004). Even philosophical constructs, such as intergenerational justice (McKerlie 2001), and public opinion dynamics between young and old (Campbell 1971; Fullerton and Dixon 2010; MacManus 1995; Rhodebeck 1993), have received scholarly treatment.

In short, most pension-related inquiries are skewed toward purely economic, administrative, human resource or normative frames. The prospect of systematic, robust political influences is often overlooked, resulting in a limited understanding of how factors such as partisanship or ideology may affect public sector pensions. Given the hyperpartisan debates surrounding pensions in Wisconsin, Ohio and other states, as well as the long-standing

ideological nature of approaches retirement policy and several other state-level policy domains, this gap is ripe for closing.

1.3 THEORETICAL OUTLINE

The principal objective of this dissertation is to explore the nature and character of political influences on certain aspects of public sector pension funding and related policy decisions. The analyses merge elements of existing pension scholarship with other theoretical approaches to provide a more comprehensive understanding of the potential link between the political climate in American states and differences across those states in the treatment of pensions. The key difference between the following chapters and much of what has been written to this point about public sector pensions is a recognition that pensions, like countless other publicly-funded programs, exist in neither an economic nor a political vacuum. As such, a constellation of factors is likely to affect funding and policy differences, which are the focus of chapters three and four.

Members of protest groups, media commentary and even elite rhetoric about public sector pensions have raised the possibility of ideologically-motivated policy preferences. In truth, this suggestion is not without theoretical backing in political science. Throughout this dissertation, I argue that the power resources framework developed largely by Huber and Stephens (2001) as well as elements of traditional public choice theory offer significant insights into how ideology and certain electoral incentives could affect pension decisionmaking in the American states. Broadly construed, the power resources model contends that policymakers' ideology affects their policy preferences in the social welfare domain, and that over time these

partisan influences are reflected in the various unique welfare schemes across the industrialized world.

The theory has been applied to retirement policy in particular. Gran (2008) posits that members of right-leaning political coalitions tend to favor income support programs that minimize public sector risk exposure, preferring greater emphasis on individual responsibility (cf. Stinchcombe 1985), while members of left-leaning coalitions favor arrangements that prescribe a state-centric role for old age income distribution and equalization. Partisan influences appear independent of other national social and economic characteristics (Korpi and Palme 2003). Still, other conditions such as the mobilization of effected groups (cf. Esping-Andersen 1985; 1990) shape the construction of welfare regimes.

The modern era of American politics, at both the federal and state levels, is one dominated by a right-leaning Republican party and a left-leaning Democratic party. Various political scientists contend that both party coalitions – both in the electorate and throughout the government – have grown more ideological over the past fifty years. Both parties have shown, from the post-Civil War era to President George W. Bush's 2005 proposal to reform social security, to harbor opposing views on the appropriateness of pensions and the role of individual responsibility. For example, a 2011 poll conducted by the Public Policy Institute of California of that state's residents found that support for public sector 401(k) accounts was stronger among self-identified conservatives as well as Republicans. Surveys regarding the privatization of social security often show similar results.

Beyond power resources, public choice proffers at least one insight about Democratic pension policy preferences. A combination of a labor unions' pro-pension stance and millions of

dollars in direct and indirect campaign support for Democrats creates a strong incentive for party elites to maintain and protect existing traditional pensions for public employees. Such incentives reinforce what should already be a strong philosophical policy preference to maintain the plans and ensure their survival into the future.

But is this actually the case? Are the partisan differences predicted actually manifest across the states? Unfortunately, few scholars have approached pensions with this question in mind. There are countless potential issues within the realm of public sector pensions to evaluate through the loose theoretical framework outlined in the preceding section. Chapter three explores partisan, ideological and economic effects on two dependent variables that link pension funding with state fiscal sustainability: the pension funded ratio, which is a metric for long-term pension funding strength, and the state cost ratio, which measures a state's relatively short-term, annual exposure to pension costs. The division of pension costs between state governments and state employees in particular has recently surfaced as a fairly contentious issue during collective bargaining negotiations. Chapter four applies the same framework to another often-divisive pension issue, that being the diffusion of defined contribution accounts as a supplement to or replacement for traditional pensions. The relative cost of both schemes is of great interest to public administrators, and receives intensive study in chapter two.

1.4 CONCLUSION

Public sector pensions have come a considerable way in the past century and a half. What was once the purview of Congress is now confronted nationally by state and local governments, where pensions succeed at catalyzing robust, but often polarized, debate. Rather

than adopt a historical frame, this dissertation aims to clarify the contemporary role of politics, economics, and other factors in affecting both pension funding across the states and the adoption of alternative benefit programs. It further seeks to compare the cost of established pensions with one of those alternatives and highlight the substantive implications of such divestment of public sector benefits. Together, the proceeding findings prove illuminating to recent and ongoing debates and provide a strong foundation for additional scholarship.

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CHAPTER 2:

ASSESSING THE COSTS AND IMPLICATIONS OF DEFINED CONTRIBUTION PLANS FOR THE PUBLIC SECTOR[4]

2.1 INTRODUCTION

Municipalities have offered an array of responses to the funding consequences linked with traditional defined benefit (DB) retirement pensions for public sector employees. Benefit reductions or freezes, contribution deferrals, issuance of pension obligation bonds and other short-term solutions have long been suggested and implemented (e.g, Balcer and Sahin 1979; Snell 2010). More substantial policy shifts, such as the replacement of DB plans with individual defined contribution (DC) accounts, represent another potential solution for reducing the public sector's annual pension expenses and simultaneously limiting exposure to long-term liabilities. As a result, DC accounts are sometimes viewed as a way to improve state and local fiscal sustainability (Beaulier 2011; Chapman 2008).

The logic of a favorable cost disparity between DB pensions and DC accounts rests with an important difference in the plans' structure, in particular, whether the loci of financial responsibility and risk reside with the employer or individual employees. DB pensions "guarantee" employees a level stipend for the duration of their retirement, with the employer

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[4] Initial drafts of this chapter were presented at the 68th Annual Meeting of the Midwest Political Science Association in Chicago, Illinois on April 24, 2010 and at the 32nd Annual Research Conference of the Association for Public Policy Analysis and Management in Boston, Massachusetts on November 4, 2010.

assuming responsibility for ensuring the benefit is paid regardless of changes to economic and/or political conditions.[5] This includes an assumption of the risks involved with investing pension contributions in equities and other variable-return securities. If the investments made with pension contributions do not grow as anticipated or suffer a loss of value due to any number of external shocks, then the employer must fund the difference from other resources.

DC accounts are not predicated on a similar compact. Instead, individual employees, not their employer, bear responsibility for accumulating sufficient assets to provide income support during their retirement. Employers may contribute to employees' accounts, but are typically not required to do so. Thus, the employer ultimately assumes no financial responsibility if employee savings prove insufficient. As a result – and significantly for fiscal sustainability concerns – DC plans eliminate for employers the possibility of any long-term liability. Furthermore, because employers make decisions about how much to contribute to employee accounts, DC plans may also present lower, more predictable annual costs.

Over the last three decades much of the private sector has abandoned traditional DB pension plans.[6] Evidence suggests private sector employers replacing pensions with 401(k) accounts, for example, have lower benefit expenses (Ghilarducci, Sun, and Nyce 2004;

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[5] "Guarantee" is perhaps an idealistic descriptor that is nevertheless often applied to DB pension plan benefits. There are many cases where employers have promised retired employees a set benefit for life, yet due to fraud, bankruptcies or other factors, have not had the assets available to finance that guarantee. Other employees have fallen on the mercy of the Pension Benefit Guarantee Corporation, only to see benefit reductions (e.g., some pilots in the aftermath of post-9/11 airline bankruptcies).

[6] This trend has been fairly well-documented; see Gustman and Steinmeier (1992), Ippolito (1995), Papke (1999) or Rajnes (2002).

Ghilarducci and Sun 2006), although administrative costs for 401(k) accounts may be greater (Munnel et al. 2008). By and large, the public sector has continued to maintain DB plans but Michigan, Alaska and Nebraska are prominent counter-examples, while several other states have initiated DC accounts and made them available as an option alongside or as a supplement to an established DB pension. Other states and municipalities are considering whether or not to pursue similar programs, in the process often sparking polarized debate between policymakers, public employees and labor unions.

This chapter presents an ex-post analysis of Michigan's experience with DC accounts for the state workforce. Beyond informing debate over the viability of alternatives to public employee retirement benefit programs and those programs' fiscal impact, the analysis offers four principal contributions. First, it advances the substantial existing scholarship on privatization as a municipal cost savings tool. Second, the study goes beyond scholarship based on hypothetical retirement plan divestment (e.g., McMahon and Ferrara 2003) to document one state's actual, multi-year experience with DB and DC costs while also discussing the broader implications of DC plan implementation, a consideration left out of other Michigan-based case studies (Dreyfuss 2011).[7] Third, it provides relevant analysis to policymakers and other parties interested in the costs of public sector pensions and alternatives to those pensions, an important consideration since expenses for either plan ultimately fall on taxpayers (Ennis 1998; Peng 2004). And finally, this chapter documents the extent to which certain pension policy decisions are

[7] A policy brief published by the Mackinac Center for Public Policy (Dreyfuss 2011) largely reinforces the central findings of this chapter, but acknowledges that "A complete analysis of the advantages and disadvantages of defined-benefit and defined-contribution plans in the public sector is beyond the scope of this brief." Note that this brief was published approximately 1.5 years following the initial presentation of this chapter's findings.

affected by both political and fiscal conditions, a phenomenon chapters three and four document explore in greater depth.

2.2 THEORETICAL SETTING

In an effort to reduce costs and reorient budgets around core functions, municipalities have privatized countless facets of public service provision. While mass-level attitudes may hinge on the type of service and non-public provider, evidence suggests the public is generally supportive of privatization (Thompson and Elling 2000). But whereas relatively recent in familiar use, privatization is not altogether new to the public domain. Indeed, at the risk of creating a line of infinite regress, the concept of privatization is at least several centuries old. Adam Smith ([1776] 2008) discussed the potential benefits of funding education with private rather than public dollars, and some semblance of public-private relationships reportedly existed in ancient Greece (Sobel 1999). The contemporary privatization movement can date its intellectual foundation at least as far back as Friedman (1962) and Drucker (1969), although tomes dedicated to problems common to public industrial management were available a half-century earlier (Guyot 1914).

Despite a historical, cross-national and popular foundation, privatization suffers from some definitional vagueness. Indeed, the term "privatization" has accumulated a number of distinct meanings. The term may generally refer to the sale of government assets to individuals or nonpublic firms, or may describe contract arrangements with private firms to provide public goods or services—agreements that may still preserve some form of governmental authority (Bailey 1987).

More specifically, privatization has been defined as "changing from an arrangement with high government involvement to one with less" (Savas 1987, p. 88); "the act of reducing the role of government or increasing the role of the other institutions of society in producing goods and services and in owning property" (Savas 2000, p. 3); and "the use of private organizations to manage and deliver public programs" (Van Horn 1991, p. 262). According to Donahue (1989, p. 215), privatization in an American context often involves "retaining collective financing but delegating delivery to the private sector." Under any of these definitions, the use of DC accounts as a replacement for DB plans arguably qualifies as an instance of municipal privatization.[8] Financial responsibility and active management of accumulated assets is transferred to individual employees and the firms selected to house their personal DC accounts.

Regardless of definition, there are several motivations behind the use of privatization. Savas (2000) identifies at least five factors which influence the decision to reduce the role or size of government. These include practical concerns, such as the desire to relieve budget stress; economic forces, wrought by increased affluence and a concomitant ability for citizens to desire higher quality services; philosophical motivations, including conservative or libertarian attitudes disposed toward smaller government; and commercial forces, or the pressure applied by private firms which can produce a comparable or superior good or service to one presently offered by the public sector. Starr (1991) writes that privatization advocates adhering to a conservative political ideology typically believe that the government is an inefficient producers and that the government often fails to accomplish its production tasks, with both problems correctable by

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[8] It is worth noting that recent suggestions that the current pension-based social security program be replaced with individual accounts has also been labeled "privatization."

appealing to market-based solutions. As Feigenbaum, Henig, and Hamnett (1999) comment, both support for and opposition to privatization can be reduced to an "underlying political dimension" which "has to do with deep-seated disagreements about the proper role of public versus private spheres" (p. 8).

Extant research is largely vague concerning the success of privatization as an instrument of public sector cost reduction. Various studies present evidence that private firms produce public goods at lower costs than the public sector; some go as far as to claim that nearly every instance of privatization applied to particular functions has yielded savings (Boyne 1998; cf. Bennett and Johnson 1980). While not claiming universal success for the policy, Savas' (1977, 1983, 1987, 2000, 2005) wide-ranging scholarship finds multiple situations of cost abatement. At the federal level, with public goods as diverse as naval ship repair and weather forecasting, private producers have been found to exhibit comparatively lower costs than competing government units (Bennett and DiLorenzo 1983). Studies focusing on production outside of the United States have also suggest cost savings from private production (Domberger and Jensen 1997).

Conversely, a number of scholars conclude that privatization yields little or no cost savings at all. Meta-analyses by Hirsch (1995) and Hodge (2000) find some instances of privatization, while still yielding reduced costs, often do so with an amount that fails to live up to initial promises. Other studies reveal little to no systematic evidence of cost savings (Bel, Fageda, and Warner 2010) or that privatization may increase costs (Thompson 2011). Likewise, Boyne (1998) writes that methodological problems in studies purporting to show the cost reductions achieved by privatization overshadow those studies' conclusions, and that as many as

half the instances reviewed do not show that any savings materialized. Kettl (1993) discusses cases in which privatization has not led to efficiency, but to fraud and waste. In the same vein, Sclar (2000) urges caution in looking at privatization as a cure for fiscal ills, detailing the complexities involved, such as the difficulties associated with defining services, performance measurement, and the sometimes high costs of transitioning from one provider to another. Sclar further points out that there are some situations in which internal public reforms may be preferable to contracting out, a sentiment with implications for present debates over whether public sector pensions should be subjected for more rigorous regulations, other internal reforms or divested outright.

2.3 METHODOLOGY

2.3.1 The Case Study Approach

Michigan, Alaska and Nebraska have implemented mandatory DC plans for some public sector employee groups, and several other states offer employees a choice of DC or DB/DC hybrid plans. With such a small sample size, not to mention the difficulties linked with comparing costs between fairly idiosyncratic programs, a cross-sectional case study of all states that have divested some or all public sector pensions is not advisable. However, as Barzelay (1993) argues, single-unit case studies can produce generalizable findings and answer important policy questions, including questions about public sector pensions (cf. Greene 1979; Papke 2004).

This chapter concentrates primarily on the state of Michigan. The state's decision to divest itself of state employee retirement by, beginning in 1997, enrolling certain new hires in a

401(k) plan (hereafter referred to as the "DC plan"), while maintaining the existing traditional pension plan ("DB plan") for tenured workers, facilitates time-series analysis of the costs to the state for each program. Continued operation of the DB plan also allows for a comparison of changes in that plan's long-term liabilities before and after the state's considerable policy shift. While Alaska also requires DC participation for some public employees, the proximity of that state's enactment (2006) does not allow for sufficient longitudinal cost comparisons. Finally, Nebraska's subsidy for poor investment performance disqualifies that plan as a "pure" DC scheme.

2.3.2 Background and History of Michigan's DC Plan

Michigan's DC plan is the result of Michigan Public Act 487 of 1996, which closed to new entrants the state's existing DB plan for state employees and required those hired after March 31, 1997 to enroll in a new DC plan, more specifically, an individual 401(k) account. Then as now, employees are allowed to contribute to their accounts up to the annual limit established by federal law. The state contributes four percent of the employee's gross salary regardless of participation and matches employee contributions up to a maximum of an additional three percent of salary. All contributions are credited to individual accounts, managed by financial services firm ING, and invested in mutual funds across an allocation of the employee's choosing.

Legislation closing Michigan's DB plan was the result of approximately five years of unsuccessful efforts to reduce the state's pension costs. Governor John Engler, a Republican, assumed office January 1, 1991 amid a national economic slowdown that, due to Michigan's

heavy reliance on the automotive industry, hit the state's non-diversified economy – and budget – particularly hard. Facing sizable deficits prompted by falling tax revenues and concomitant increases in social services costs, all within the framework of a balanced budget requirement, Engler tried on multiple occasions to reduce the state's DB plan contribution. Without support from Michigan's divided legislature, however, his efforts were unsuccessful.

By 1996, Engler planned to redirect his efforts away from pension contributions toward a wholesale policy shift. The governor favored moving public employees into a DC plan. The move was publicly sold on the potential cost savings that Michigan would eventually realize, following the justification given for several other privatization schemes championed by Engler throughout his tenure as governor.

Curiously, a bill which would have implemented a DC plan for public employees had already languished in the Michigan House of Representatives for two years without passage. The failure of that bill is not surprising, since Democrats controlled at least one legislative chamber during Engler's first term. Even Republicans, who had nothing more than a slim majority, had been reluctant to accede to Engler's earlier requests to reduce Michigan's pension contributions.

Engler nevertheless had high hopes, but the elections of 1996 dealt a roadblock to his pension agenda. That fall, Democrats regained control of the Michigan House of Representatives, leaving Engler just two months of unified Republican control of the state legislature. Democrats were not likely to support suspending an existing pension plan in favor of a new 401(k), especially given public sector labor union support of the current pension and

opposition to the governor's proposal, in addition to resistance from the state's other dominant labor voice, the United Auto Workers.

Engler decided to take advantage of the lame duck session. After finding a sponsor, Republican Representative Kim Rhead, and six co-sponsors, the bill moved quickly. The legislation was referred to committee on November 19, 1996 and passed the Michigan House of Representatives and Senate in short order (on December 5, 1996 and December 11, 1996, respectively). Support was reasonably strong, passing the House 56 – 40 and the Senate 21 – 16, attracting some support from Democratic legislators but far from large bipartisan majorities. After Engler signed the bill on December 31, 1996, Michigan's policy on state employee retirement was forever altered. The state's decades-old pension plan would be closed to new hires the following March, with all new employees instead enrolled in a 401(k) account. Engler became the first governor in United States history to close an existing public sector DB plan in favor of a DC plan, but he would not be the last.

2.3.3 Scope

Michigan's Office of Retirement Services (ORS) administers multiple retirement plans for the benefit of the state's varied public employee groups. Four of these are DB plans: the Michigan Public School Employees Retirement System; the State Employees Retirement System (SERS), primarily for state civil servants; the State Police Retirement System; and the Judges Retirement System, which covers judicial employees and some members of the executive branch. The state also maintains three DC plans, one each for state and judicial employees who

would otherwise qualify to participate in the SERS or Judges pensions, respectively, but are not enrolled due to reasons discussed below, and a third for legislative employees.

Due to the redundancy in Michigan's retirement programs and the fact that not all plans include a contrastable DB and DC component, I concentrate principally on costs associated with providing benefits to traditional state employees—those covered under SERS. However, the nature of Michigan's available data requires a slight liberalization of this constraint. The state maintains specific cost data for the SERS DB plan, but was unable to provide information of comparable specificity for the SERS DC plan; costs for the latter were aggregated with the DC plans which include a relatively small number of judicial and legislative employees. DC plan costs quoted below are these aggregated figures. Since approximately 90% of Michigan's total DC plan contributions are made to SERS employees, including a small number of additional participants is unlikely to skew that program's costs, even more so given that the base and matching contribution structure is the same for each DC plan. Finally, the DB/DC juxtaposition involves plans large enough to mitigate concerns that they may be too small, individually or together, to yield meaningful results. As of September 30, 2011, the SERS DB plan counted 81,392 total beneficiaries, including 19,650 current employees, and net assets of $8.9 billion (ORS 2011). During 2008, Michigan contributed to DC plan accounts of 26,904 additional employees.

This chapter is chiefly concerned with costs borne by the state of Michigan for two different public sector retirement benefit programs. Assessments of health insurance and other post-employment benefits (OPEB) are beyond the scope of this study. Indeed, complexity in health care plan design alone warrants separate treatment. Suffice to say that the fiscal condition

of OPEB across the states is similar to that of pensions. For example, Michigan's long-term OPEB liability for state employees is estimated at $13.5 billion, but the state has no vested assets at this time to finance that obligation. This forces Michigan and other states to pay OPEB costs on an annual basis. Like pensions, those costs are considerable. Michigan spent $388.2 million during 2011 on OPEB, more than the state's pension contribution that year (ORS 2011), against a required contribution of $1.03 billion.

2.3.4 Cost Measurements

The most straightforward metric for comparing the annual costs of DB and DC plans to Michigan is the payroll contribution rate. This measure represents the state's total contribution to each plan, expressed as a percent of the total salaries of employees enrolled in each plan. For example, if in a given fiscal year Michigan contributed $200 million to the DB plan, and the salaries of employees in the DB plan totaled $1 billion, then Michigan's DB payroll contribution rate would be 20%.

DC plan costs are determined by the base and matching contributions described previously, but the DB rate is a combination of two separate components. The normal cost is the present dollar value of estimated future benefits, amortized over the expected length of employee service. The normal cost is a proxy for Michigan's current responsibility for providing future pension benefits. The second component of the DB cost is the unfunded actuarial accrued liability cost, or UAAL cost, which is assessed to amortize any unfunded liabilities in the DB plan. UAAL costs are a measure of the state's risk assumption for ensuring that adequate funding is maintained in order to finance pension benefits over the long-term and is assessed

whenever the DB plan's liabilities exceed current assets. Both the normal and UAAL costs can be expressed as a payroll contribution rate and are reported as such below.

The DC cost advantage joins DB and DC rates into a single measure of comparative plan cost. The conceptualization of this variable is borne of an expectation that DC costs will be lower than DB costs, in accordance with previous scholars' research, and should therefore have a positive sign if the DC plan is less expensive. The DC cost advantage is calculated as follows:

$$\text{DC COST ADVANTAGE}_t =$$

$$\text{DB CONTRIBUTION RATE}_t - \text{DC CONTRIBUTION RATE}_t$$

where t is the state fiscal year. For example, if in a given fiscal year Michigan's DB rate was 15% and the DC rate 10%, then the DC cost advantage is positive five percentage points.

Annual plan costs do not yield an indication of a DB plan's long-term liabilities or those liabilities' variation over time, a key concern to state policymakers. DB plan liabilities are instead measured using the actuarial accrued liability, or AAL. The AAL is generally defined as the total dollar value of benefits expected to be paid to current and future retirees and their beneficiaries, based on an actuarial formula that incorporates the employees' average compensation, years of service, plan specifics, and other demographic factors.

2.3.5 Data

Michigan's SERS DB plan costs were obtained from the plan's Comprehensive Annual Financial Reports (CAFRs) and other state government documents. CAFRs are a collection of financial statements audited by accounting firms in accordance with regulations established by

the federal General Accounting Standards Board (GASB) and contain a wealth of data on DB plan financing. Data for the DC plan were provided by ORS at my request.[9] Dollar figures have been adjusted for inflation where necessary. Unless otherwise noted, "fiscal year" (FY) refers to Michigan's fiscal year, which runs from October 1 to September 30 of the following calendar year.

2.4 EMPIRICAL RESULTS

2.4.1 Comparing Michigan's Annual DB and DC Plan Costs

On the following page, Table 2.1 specifies Michigan's SERS DB and DC payroll contribution rates and the DC cost advantage for fiscal years 1999 through 2010. Two qualifications should be noted. First, although the DC plan was implemented during 1997, contribution rates for 1997 and 1998 were not available from ORS, and consequently, both years are omitted from the table. Second, the DC payroll contribution rate for 2010 is an estimate based on the actual figure from 2009.

Two periods are evident when evaluating the DC cost advantage. From 1999 through 2002, the total DB rate was between 0.74 and approximately 1.5 percentage points lower than the DC rate, producing a negative DC cost advantage. During this period, the only years in which the DB plan's UAAL cost was negative, the DC plan was the more expensive retirement benefit for Michigan state employees. But from 2003 onward, as the state's cost for subsidizing

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[9] A special request was placed because DC plan costs are not included in CAFRs and were less frequently quoted within state government reports. Even in those instances where DC costs were listed, they were often estimates, not actual, audited costs. Other scholars investigating Michigan's DC costs have had to make the same request.

TABLE 2.1
Michigan SERS DB and DC Plan Required Annual Costs, FY1999 – FY2010

Fiscal Year	SERS DB Plan (%): Normal Cost	UAAL Cost	Total DB Rate	DC Rate (%)	DC Cost Advantage
1999	7.65	-2.36	5.29	6.22	-0.93
2000	7.61	-2.25	5.36	6.10	-0.74
2001	7.80	-3.20	4.60	6.11	-1.51
2002	8.10	-2.90	5.20	6.12	-0.92
2003	9.30	0.60	9.90	6.01	3.89
2004	8.10	5.80	13.90	6.08	7.82
2005	8.20	11.30	19.50	6.21	13.29
2006	8.30	8.80	17.10	6.04	11.06
2007	8.30	8.80	16.90	6.05	10.85
2008	8.30	8.60	17.10	6.37	10.73
2009	8.30	15.90	24.20	6.30	17.90
2010	7.20	20.50	27.70	6.30	21.40

Notes: DC cost advantages are percentage point differences; 2010 DC Rate is an estimate based on the 2009 rate
Sources: Michigan ORS; Dreyfuss (2011); Olson (2008, 2009); Sanderson (2007)

unfunded DB plan liabilities turned positive, DC rates were lower than DB rates by a larger and growing margin. This turnabout lead to a positive DC cost advantage, suggesting that since 2003 the DC plan has been the less expensive retirement option for the state of Michigan. Most recently, the DC cost advantage during fiscal years 2009 and 2010 was between a positive 17 and 21 percentage points, continuing the double-digit trend that emerged in 2005. To summarize, Michigan's DC plan for state employees has more often than not been less expensive relative to the state's DB plan, although a positive cost advantage was elusive until 2003 – five full years following implementation.

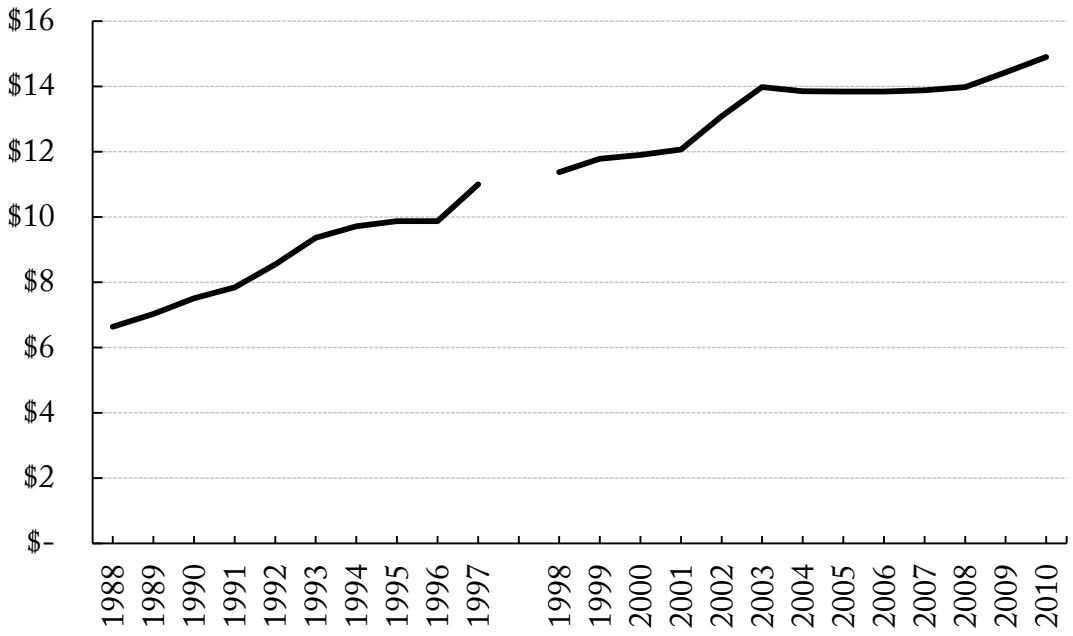
Two additional observations can be drawn from Table 2.1. First, consistency in the cost of each plan is quite different. Taken as a whole, the DC rate was more stable than the total DB rate (σ=0.12 and 7.88, respectively), the latter witnessing an over fivefold increase since the 2001 fiscal year. Undoubtedly, steadiness in retirement benefit costs and a lower payroll contribution rate—both characteristics of the DC plan—are traits of value to officials grappling with numerous unpredictable budget variables and the presence of a balanced budget requirement.

Second, Michigan's annual DC rate of around six percent, which exceeds the base contribution of four percent, suggests many employees contribute to their DC accounts and do so with an amount sufficient to earn a state match. That this rate is fairly consistent across a decade that witnessed wild economic swings further suggests state employees did not, in the aggregate, significantly reduce or increase their personal retirement contributions in response to exogenous economic conditions. As discussed below, this is a stark contrast to the state's contribution behavior over the same span.

2.4.2 Liability Changes Within Michigan's DB Plan

On the next page, Figure 2.1 plots the SERS DB plan's actuarial accrued liability (AAL) in 2010 dollars for fiscal years 1988 through 2010. This timeframe is subdivided into two useful phases. The first, from 1988 through 1997, represents the ten-year period before Michigan initiated mandatory DC accounts for new hires and closed the pension to new entrants. The second, from 1998 through 2010, represents the 13-year period following implementation. While Michigan's policy change was implemented roughly half-way through the 1997 fiscal year, it was not possible to divide DB plan liabilities at mid-year. Instead, the first complete fiscal year

FIGURE 2.1
Pre- and Post- DC Implementation Adjusted Actuarial Accrued Liabilities of the Michigan SERS DB Plan, FY1988 – FY2010 (in billions of 2010 dollars)



following the policy change (1998) has been chosen as the commencement of the post-divestment period.

The DB plan's liabilities vary mostly as expected both before and after the DB plan was closed. During the ten-year period preceding implementation of the DC plan, the DB plan's liabilities grew on an adjusted basis from $6.64 billion in 1988 to $11.0 billion in 1997, an increase of 65.7%. Following closure of the DB plan to new hires in 1997, liabilities grew on an adjusted basis from $11.37 billion in 1998 to $14.9 billion at the end of the 2010 fiscal year, a 13-year growth of just 31.0%. Collectively, this suggests that Michigan's decision to enroll new state employees in a DC plan has helped to slow – but not eliminate – the growth of liabilities in the DB plan. The rate of change in liability growth is perhaps more clear if the slopes of linear

trendlines fit to the pre- and post-enactment periods are contrasted. For the pre-enactment period the equation is 0.4687t – 6.16, and for post-enactment, the equation is 0.2722t – 11.395, where t represents fiscal year. This decrease is notable, as Pew (2010) found public employee pension liabilities nationally grew by $323 billion between late 2006 and mid-2008. But significantly, the unfunded portion of the DB plan's liabilities remained.

2.4.3 Administrative Expenses

DB and DC plans present different types of administrative expenses. Since DB plans use current assets to pay for administration, associated costs are usually paid by the employer, albeit indirectly, and potentially by participating employees. Administrative expenses for DB plans cover overhead, legal fees, compensation and investment charges generated from buying and selling investments with the DB plan's assets. Conversely, the cost to administer DC plans is usually paid, directly or indirectly, by participants out of the funds that have accumulated in their accounts, making the employer's cost of administering DC plans comparatively lower by transferring the expense to individual employees.

Because available data for Michigan's DB and DC plans varies in level of detail, a rigorous, comparative analysis of administrative costs is difficult. While CAFRs and an audit of the state's DC plan each list administrative expenses, only the DB plan data break the aggregate figure into specific categories. The cost of Michigan's Office of Retirement Services, the agency which oversees both plans, presents another wrinkle. DC participants undoubtedly utilize some of the agency's services, but to a lesser extent than DB participants. Without knowing how employees in either plan make use of the agency, it is hard to apportion the agency's budget to

each plan for sake of comparison. Agency structure and the shared utilization structure make cost apportionment nearly impossible.

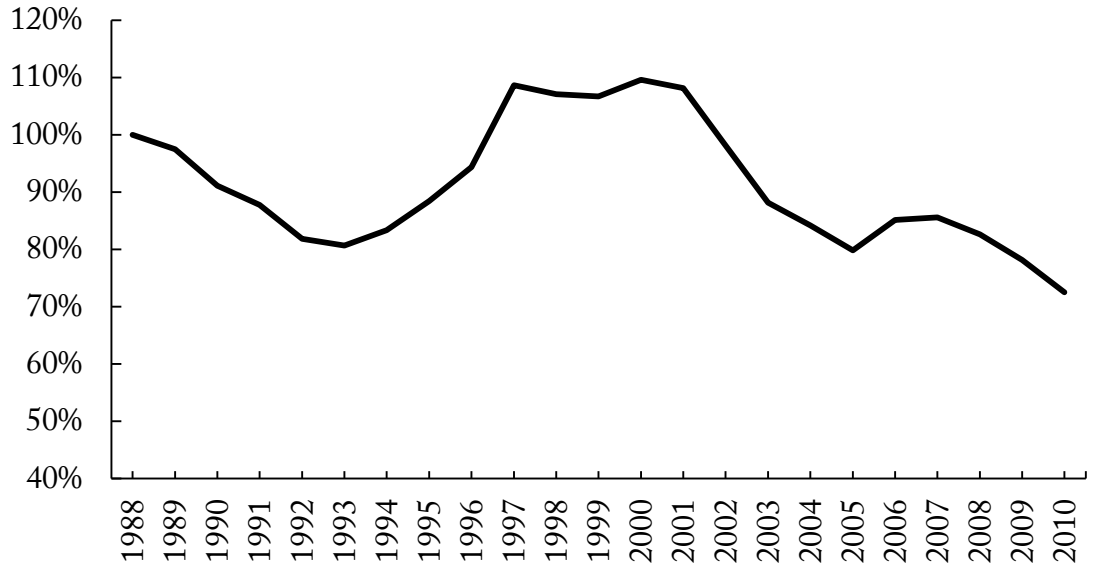
Still, a few comparisons about the costs associated with managing Michigan's DB and DC plans can be made. According to ORS (2009), the DB plan spent $4.86 million on administration and an additional $2.26 million on investment commissions in 2009, for a total of $7.12 million or 2.07% of the state's DB plan contribution that year. DC participants' aggregate administrative costs are comparatively higher than those of the DB plan. An audit of Michigan's DC plan (Michigan Office of the Auditor General 2009) reports $5.96 million and $5.85 million in administrative expenses was paid by participants in 2009 and 2008, respectively, representing 2.47% and 2.41% of total contributions to the plan. Note that while the DC plan exhibits higher administrative costs, because they are paid by individual employees, the DC plan still accumulates savings to the state of Michigan.

2.5 UNFUNDED PENSION LIABILITIES AS A DRIVER OF INCREASED ANNUAL DB PLAN COSTS

The data in Table 2.1 suggest that the assessment for financing unfunded liabilities, not the normal cost of providing pensions, is behind the increase in Michigan's overall public sector pension costs. If the annual DB normal cost were instead compared to the DC rate, the DC cost advantage would be much smaller—in the single digits—and the two plans would not have appreciably different annual costs. But Michigan has assumed responsibility to cover any unfunded liabilities in the DB plan—a responsibility that translates into an annual monetary assessment.

Underfunding in Michigan's SERS DB plan has increased in recent years as the plan's funded ratio—defined as the ratio of the plan's current assets to the plan's long-term liabilities—has decreased. Figure 2.2 shows the DB plan's funded ratio from 1999 through 2010.

FIGURE 2.2
Funded Ratio for Michigan SERS DB Plan,
FY1999 – FY2010



From 1999 through 2001 the DB plan's assets exceeded liabilities, leading to funding ratios in excess of 100%, and at 98% in 2002, the plan was essentially fully-funded. An overfunded DB plan can provide cost savings to states, because the surplus allows states to reduce contributions. Recall from Table 2.1 that from 1999 through 2002, Michigan's UAAL cost was negative, offsetting the normal cost of the DB plan. This lead to a lower total DB rate, representing a savings over what the annual cost would have been without an overfunded DB plan.

Beginning in 2003, as the DB plan's funded ratio declined, the UAAL cost turned positive and began to increase, and has remained positive ever since. When combined with the already positive but stable normal cost, the UAAL cost has been the primary driver of Michigan's increased DB plan expenses. Since 2005, the UAAL cost has exceeded the normal cost in every fiscal year. In other words, Michigan's DB rate since 2005 has been determined more by the plan's unfunded liabilities than by the normal cost.

2.6 CONTRIBUTORS TO GROWTH IN UNFUNDED DB PLAN LIABILITIES

2.6.1 Early Retirement Policy

A number of factors have led to the SERS DB plan's post-2002 underfunded status, each notable to public administrators considering whether or not to follow Michigan's path toward DC accounts and those interested in unraveling the sometimes complicated relationship between public sector pensions and budget-making institutions, namely the state governor and legislature. In essence, the issue is one of plan assets failing to reach the plan's long-term liabilities, so the problem could be that, relative to assets, liabilities have grown too quickly. This is certainly one of the dilemmas with Michigan's DB plan. The otherwise flat post-divestment liability curve shown in Figure 2.1 has one significant exception, which occurs between 2001 and 2003.

The increase between these years can be traced to Michigan's decision in 2002 to offer an "early-out" option to a large share of the state workforce in an effort to relieve general fund deficits. The policy was a joint decision of the Michigan legislature and then-Governor John Engler, a Republican. The basis of the policy was an assumption that older state employees, those with typically higher salaries due to longer terms of public service, could be enticed into

retirement, thus saving the state from having to continue financing their salary and benefit costs. Even if such workers were replaced, it was assumed that turnover would be accomplished by hiring younger workers with less experience, who would command lower salaries. A Michigan Senate Fiscal Agency briefing published at the time notes the likelihood of general fund savings from an early-out program, and claimed that the savings would exceed the cost to the state of any resultant increases to DB plan liabilities (Carrasco 2002).

The result of the early-out policy was a number of premature retirements and an increase in long-term pension liabilities,[10] as thousands of active employees were transferred into the DB plan earlier than would have otherwise occurred. Since many of those employees would thus spend a longer period of time receiving pension benefits, and were granted enhanced benefits for retiring early, the DB plan's long-term liabilities necessarily increased quickly. In the absence of Michigan's early-out policy in 2002, it is not likely the SERS DB plan's long-term liabilities would have shown the associated increase and would have instead been lower today. A lower long-term liability would, in theory, decrease the gap between liabilities and assets, shrinking Michigan's unfunded liabilities and the annual cost they present to the state now and for the foreseeable future.

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[10] Retirements among employees participating in the early-out program were "premature" only in the sense that those employees left active employment sooner than they would have absent the incentive. Interestingly, Michigan's 2002 early-out program may have led some employees in subsequent years to delay retirement, believing that if enough time passed and budget problems persisted, the state would offer another retirement incentive.

2.6.2 Declining Amortization Period

The time period over which Michigan amortizes its unfunded pension liabilities also contributes to the UAAL cost increase. Current policy dictates that the DB plan's unfunded liability at the close of each fiscal year be divided over a multi-decade period, with the annual share paid into the DB plan by the state. However, Michigan's amortization period is not fixed; it is declining. In fact, the state's annual assessment for unfunded liabilities was determined by dividing the total over a 37 year period in 1998, but only 26 years in 2010. Just as mortgage payments increase with successively shorter payback periods, so too has Michigan's UAAL cost increased. The state's amortization schedule is a result of the DC plan enactment in 1996. By closing the DB plan to new participants, the plan was made terminal with an eventual sunset date. The declining amortization period recognizes this by not allowing Michigan to spread the costs of a finite program over an infinite horizon, instead forcing the state to realize its responsibility over a more realistic timeframe. This framework is a sharp departure from traditional pension accounting, which allows states and municipalities to continually amortize unfunded liabilities over, for example, an ever-advancing 30-year period.

2.6.3 Investment Returns

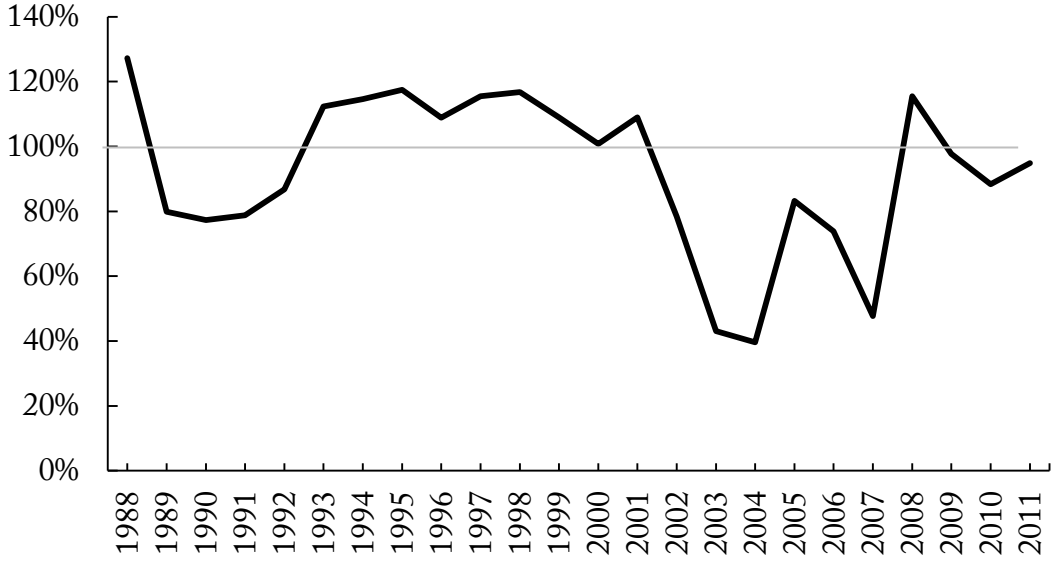
Poor investment performance has also factored into Michigan's unfunded pension liabilities. One of the DB plan's actuarial assumptions is that investments will grow an average of 8% annually. At one time, the plan's portfolio exceeded this amount; in 2000, its 10-year average annual rate of return was 13.3% (ORS 2000). But performance has lagged since. By 2009, the 10-year average rate of return had dropped to 3.7% (ORS 2009). Again, because

Michigan is ultimately responsible for financing pension benefits, the state must make up the difference when the plan's investment performance fails to meet expectations.

2.6.4 Variability in and Manipulation of DB Plan Contributions

Still another source of the UAAL increase is Michigan's treatment of DB plan costs. Some states have achieved balanced budgets by deferring or failing to make total annual pension contributions. Michigan is one of many states and municipalities whose actual, annual DB plan expenses often differs from the so-called required cost, which was the basis of the data presented in Table 2.1. Figure 2.3 shows the percent of the required cost, known as the annual required contribution or "ARC," that Michigan actually paid into the DB plan during fiscal years 1999 through 2011.

FIGURE 2.3
Percent of Required DB Plan Costs Paid by Michigan, FY1999 – FY2011



Michigan failed to meet the ARC in most years, though the state did exceed it in 1999, 2000, 2001 and 2008. The variance is due, at least officially, to differences between projected and actual payroll numbers,[11] but one cannot help but notice Michigan's actual DB plan payments tend to follow the state's overall budget circumstances. State coffers were flush from 1999 – 2001, and again in 2008 following an income tax increase. In the intervening years, the state's financial situation was typically marked by budget deficits, and the Michigan legislature and then-Governor Jennifer Granholm, a Democrat, failed to remit full annual pension contributions. Regardless of cause, Michigan's cumulative under-contributions between 1999 and 2011, even after being offset by the excess contribution years, was $521.7 million (unadjusted). Had that amount been paid into the DB plan, the plan's funded ratio would certainly be higher, and the state's UAAL costs proportionally lower.

This raises an interesting methodological question: should the DC plan cost be compared to the DB plan's required or actual cost? The data presented in Table 2.1, which contrasted required DB and DC costs, is an analysis based on a "by the books" scenario in which Michigan would have fully paid, in each year, the state's actuarially-determined, required contribution. In reality, Michigan, like many other state and local governments, sometimes over-contributes, but has more often under-contributed, to the DB plan. This practice arguably lowers the DB plan's cost, but only by displacing the cost difference into future years.

A revised set of DB payroll contribution rates can be calculated based on Michigan's actual payments to the plan, though they cannot be apportioned across normal and UAAL costs because CAFRs do not explain how the differences are accounted for. Revised total DB payroll

[11] Per a Michigan House Fiscal Agency analyst, via e-mail.

TABLE 2.2
Michigan SERS DB and DC Plan Actual Annual Costs, FY1999 – FY2010

Fiscal Year	Revised DB Rate (%)	DC Rate (%)	DC Cost Advantage
1999	7.65	6.22	1.43
2000	5.40	6.10	-0.70
2001	5.00	6.11	-1.11
2002	4.10	6.12	-2.02
2003	4.30	6.01	-1.71
2004	5.50	6.08	-0.58
2005	13.60	6.21	7.39
2006	14.70	6.04	8.66
2007	8.30	6.05	2.25
2008	20.20	6.37	13.83
2009	19.80	6.30	13.50
2010	22.80	6.30	16.50

Notes: DC cost advantages are percentage point differences; 2010 DC Rate is an estimate based on the 2009 rate
Source: Michigan ORS CAFRs

contribution rates are listed in Table 2.2, along with the DC rate (which is unchanged) and a revised DC cost advantage, for fiscal years 1999 through 2008.

Using actual rather than required DB costs leads the DC cost advantages in Table 2.2 to differ from those in Table 2.1. In 1999, the state overpaid DB plan costs, causing a higher revised rate in Table 2.2. This changes the resulting DC cost advantage to positive 1.43 from negative 0.93 points. For 2000 and 2001, required and actual DB costs were fairly close, so the DC cost advantage does not change substantially from Table 2.1. The largest difference is seen in 2003 and 2004, when actual DB rates are below those of the DC plan. This results in a negative DC cost advantage, which had been shown as positive when the required costs were

used. The DC cost advantage remained positive from 2005 through 2008 in Table 2.2, but with some differences compared to Table 2.1; for 2005 and 2008, the advantage in Table 2.2 is larger, but for 2006, 2007, 2009 and 2010 the advantage is smaller. Overall, using this modified comparison, the DC plan is less expensive than the DB plan only from 2005 forward.

There is technically a third, unofficial class of DB plan costs, which one may term "net contributions." This category differs from required and actual costs because money appropriated to the DB plan in Michigan has not always remained in the fund. At several points during the previous decade, the Michigan legislature and governor transferred funds out of the DB plan in order to satisfy other budget needs.

For example, the state's actual DB payment in 2002 was $87.5 million, but Michigan Public Act 93 of 2002 mandated that $87.5 million be transferred from the DB plan to a "health advance funding subaccount," a fund intended to cover retiree health benefits (ORS 2002). This bill was signed by Republican Governor John Engler after bipartisan, near-unanimous votes in the Michigan House of Representatives (94 – 8) and Senate (36 – 0). Consequently, in 2002, Michigan's net DB plan cost was zero dollars, because that year's appropriation for pensions was later transferred out to help finance the cost of public employee health benefits.

A similar transfer of $17.4 million into the same subaccount took place in 2003 (ORS 2003) under Democratic Governor Jennifer Granholm for the same stated purpose. But in later 2003, Michigan transferred $58.2 million from the health subaccount to the state's general fund to help close that year's budget deficit, repeating the practice again in 2004 and a third time in 2007, at which point the subaccount's assets were exhausted. All three transfers took place under

the Granholm Administration, which enjoyed strong campaign backing from public sector labor unions, with at least some Republican legislative support.

Overall, then, for 2002, 2003, and 2007, Michigan's net DB plan costs were even lower than reported in Table 2.2, but only because of legislative and gubernatorial budget maneuvering, not due to any cost efficiencies within the DB plan. And worth noting is that Michigan's budget transfers prompted opposition from the federal Department of Health and Human Services (HHS). The Department had authority on the matter because a portion of the money transferred originated with the federal government. HHS objected to the use of federal dollars originally intended to finance employee benefits being used to balance the state budget. Michigan eventually had to repay the federal share of the transfers plus interest.

2.7 CONSEQUENCES AND CONSIDERATIONS FOR PUBLIC SECTOR EMPLOYEES

2.7.1 Comparing Employee Contributions under Michigan's DB and DC Plans

As structured throughout the period considered in this chapter, Michigan's DB plan was largely non-contributory. In most circumstances, state employees did not contribute toward the cost of their pension benefits, except those who purchased service credit en route to an early retirement. Thus, DB plan participants were at a relative advantage to their peers who participated in and contributed to the DC plan. Data suggest the latter contributed just over six percent of their salaries to their retirement accounts, an assessment that was not deducted from the paychecks of DB participants. Yet wage structure is identical for DB and DC participants; DC participants did not receive proportionally higher wages to compensate for their

contributions. On this consideration, the DB plan is a better program from the perspective of a typical state of Michigan employee during the term of active employment, because the state is responsible for the entire cost of the employee's pension benefits.

However, DC participants are not necessarily worse off than their DB peers, because DC participants own the assets in their individual accounts. These balances can grow, perhaps at a rate above that of the pension fund, may be accessed in financial emergencies, and may be bequeathed at death to family, charity, or both. These advantages of DC accounts are not necessarily true of the DB plan, whose benefits may cease at the employee's death (typically only if an employee has chosen this option), cannot be withdrawn in an emergency and may favor genders and/or races with longer post-retirement life expectancies.

2.7.2 Risk

Investment losses do not directly impact DB participants to the extent that losses impact DC participants. This circumstance results from the fundamental shift in risk between DB and DC plans. Whereas DB plans institutionalize risk to state government, DC plans divest risk to the employee. Of course, the same investment market whims that affect pension funding and have contributed to increased pension costs for the state of Michigan also affect balances in employees' DC plan accounts. The key difference, however, is that losses in DC accounts are only recovered by future investment gains or additional employee contributions, perhaps accomplished by extending employment beyond what was originally planned; by increasing contributions, thus reducing current income; or investing aggressively in the hope of making up lost ground. Some workers do engage in these behaviors to shore up account balances, yet

evidence suggests low-income workers may not (Weller 2010). A conservative investment strategy, particularly one executed close to retirement, avoids many stock investment risks but also lowers returns. Certainly, careful thought about tradeoffs must be exercised by DC plan participants, whose retirement plan requires them to adopt a much more active role in planning their financial future—a task that can prove difficult for those who find investing stocks, bonds, and mutual funds daunting, not that DB plan benefits are necessarily better understood (Gustman and Steinmeier 1999; cf. Munnell and Sunden 2004).

2.7.3 Retirement Income Replacement

As of this writing a comparison of the actual, concrete benefits conferred by each of Michigan's state employee retirement plans is somewhat complex. Because no employee has fully "matured" through the DC plan, i.e. no one who started as a new employee in 1997 has completed a full career with the state of Michigan and has now retired, one can only guess about what DC account balances may accumulate to individual employees at some point in the future. In this respect, the recent implementation of Michigan's DC plan, as well as many in the private sector, is an unfortunate limiting factor. But even an "apples to apples" comparison may not be appropriate and could well require a sophisticated analysis that goes beyond the scope and space allotted here. Given career turnover, the portability of DC plan balances from other employers and the availability of other retirement savings vehicles that are totally divorced from the traditional employer-based model, such as Roth IRAs, it is fully possible that DC participants view their accounts as only one part of their total retirement savings.

What is most likely is that retirees under the DC plan will fall into one of three categories. The first group consists of those who, because of prudent investment strategy and regular contributions, accumulate balances that are sufficient at retirement to annuitize and live off the resultant investment income. The likelihood of this outcome has some grounding in the literature. Samwick and Skinner (2004) found employees are generally better off with DC plans because asset accruals exceed those under DB schemes, although balances depend heavily on contribution levels (Fore 2001).

The second group of employees contains those for whom a comparison of benefits yielded by DC and DB plans is difficult to make. This is a common thread of retirement benefit analysis. Both Bodie, Marcus, and Merton (1988) and Poterba et al. (2007) suggest DB and DC plan comparisons are vague; in some circumstances DB plans are found to be better, while in others, DC plans have a higher utility for employees. Once again, the outcome depends largely on employee contributions.

The third group are those who are worse off under the DC scheme than they otherwise would have been if enrolled in Michigan's DB plan. These employees' DC balances at retirement may simply not grow large enough to yield annuitized investment earnings equivalent to those employees' living expenses, and may even fail to be sufficient to simply be withdrawn over a finite time period. This, of course, is the chief criticism of DC plans. Importantly, Poterba et al. (2007) find DC plans are more likely than DB plans to result in low retirement income, although not every participant is worse off and many fare better under DC schemes. Also worth noting is the potential difference in retirement incentives between DB and DC plans;

according to Friedberg and Webb (2005), DC schemes lead employees to delay retirement by an average of two years (cf. Rubin 1965; Schrager 2009).

Nevertheless, some projections based on contribution behavior and Michigan's matching contribution structure can be made. An outcome measure useful for comparing DB and DC benefits is the percentage of pre-retirement income an employee may hope to receive under each scheme after the employee leaves active employment and retires. This measure is referred to as the employee's annual income replacement. Whereas a DB plan establishes this amount based on an employee's salary and length of service, income provided by DC plans is typically that provided by investment returns earned on account balances. In other words, an employee retiring with a DC account theoretically leaves the principal intact and utilizes any investment earnings for income support.

Some rudimentary DC plan benefit estimates are shown in Table 2.3. Assuming a starting salary of $38,500, standard assumptions for investment growth (eight percent annually) and wage growth (three percent annually) and simple, annual compounding of investment earnings,[12] these scenarios estimate what a typical state of Michigan employee will accumulate in their DC accounts over a 40-year tenure of employment. The final column shows the annual income replacement, i.e. the percent of the employee's average final annual salary he or she may expect to receive in investment earnings off their 401(k) account balance, providing the employee annuitizes the balance and withdrawals earnings (assumed to be 5% annually, reflecting a more conservative investment approach during retirement).

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[12] The assumption of annual compounding, rather than quarterly or even daily compounding, reduces the "Balance at Retirement" estimates. Assumptions for investment and wage growth are generally in line with those made by pension administrators.

TABLE 2.3
DC Plan Balance and Retirement Income Scenarios

Employee Contribution	Employer Match	Investment Return	Wage Growth		Balance at Retirement	Annual Income Replacement
1%	5%	8%	3%	$	921,204	40.0%
2%	6%	8%	3%	$	1,228,272	53.4%
3%	7%	8%	3%	$	1,535,340	66.7%
5%	7%	8%	3%	$	1,842,408	80.1%
10%	7%	8%	3%	$	2,610,078	113.5%

Notes: Balance at Retirement is based on the assumptions outlined for each scenario and simple, annual compounding of investment income. Annual Income Replacement is based on 5% annual investment earnings on the balance for each scenario divided by the average final compensation paid over the employee's last five years of employment. Because all comparisons are relative to an employee's salary, the actual salary does not change the Annual Income Replacement percentages.

The scenarios illustrate that even a modest annual employee contribution of 2% will theoretically allow a state of Michigan employee in the DC plan to replace just over half of their pre-retirement income during retirement. Using a more aggressive approach, a 10% contribution, the employee could well increase their income in retirement over what was previously earned during active employment. A higher contribution percentage may also help make up for any investment losses, stagnant wage growth and/or a higher rate of inflation.

These scenarios generally compare well with what an employee may receive in benefits from Michigan's DB plan. During the 2010 fiscal year, the average monthly benefit paid to employees with at least 30 years of service was $2,292 against a final average salary of $50,437 (ORS 2011). This indicates an average annual income replacement of 54.5% for the DB plan,

something that is within reach for the typical DC plan participant. But, as the literature and common sense dictate, outcomes hinge on an employee's contribution behavior during their tenure as an active worker. None of the scenarios in Table 2.3 is guaranteed.

2.8 DISCUSSION

This chapter yields five conclusions about retirement plan divestment in the state of Michigan. First, annual costs for the DC plan have often, but not always, proven lower than DB plan costs. Exceptions to this trend resulted from low DB costs, a product of the plan's overfunded status in the late 1990s and early 2000s, or the state's failure to remit full annual pension contributions. The latter technically lowers the DB plan's annual cost, but harms the plan's long-term solvency and leads to higher annual costs in the future. Second, the state's annual DC plan cost of around six percent of wages has demonstrated greater stability over the past decade than that of the DB plan, which has ranged from less than five to as much as 20 percent of employee wages. Third, following the closure to new hires of the DB plan, liability growth slowed relative to the pre-divestment period, although the unfunded portion of those liabilities has remained. Connected to this point is the fourth, that Michigan's increasing DB cost results from the plan's chronic unfunded liabilities. Fifth and finally, there are many question marks in comparing the benefits provided to employees under DB and DC plans.

From a fiscal perspective, it is hard to argue that the implementation of DC accounts for state employees has been anything but a net positive for Michigan's long-term fiscal outlook. The state's divestment has resulted in a plan with lower, more stable annual costs that also eliminates exposure to new long-term liabilities. Considering an alternative scenario, in which

the DC plan was not implemented, makes this point even clearer. If the DC plan's current participants, which number over 26,000, had instead been enrolled in the DB plan, the DB plan's annual costs and long-term liabilities would be proportionally higher—some $2.3 billion to $4.3 billion higher (Dreyfuss 2011). But since state revenues do not depend on the retirement plan in which employees enroll, Michigan's ability to finance the DB plan increased costs and liabilities would have remained unchanged. The end result could have been larger budget deficits, leading to higher taxes on citizens and firms, greater reductions in public services, cuts to other forms of employee compensation or some combination thereof. Otherwise, Michigan may have continued to make inadequate annual pension contributions, solving a short-term budget problem but creating a larger unfunded liability which, eventually, would have to be paid.

One additional benefit is that a DC plan makes it more difficult for state officials to use employee retirement funds for general budgeting purposes. States may reduce or suspend contributions to employee accounts during times of financial duress, as many private employers do, in order to achieve a balanced budget or to satisfy emergency needs. But the individual ownership of DC accounts prevents states from using accumulated funds to offset deficits, which is not the case with traditional DB plans. It could be argued that DC plans help encourage more responsible budgeting, as the plans are not subject to the types of financial manipulation or fund transfers witnessed in Michigan and several other states and municipalities.[13]

What implementing a DC plan for new hires has not accomplished, however, is any elimination of the DB plan's funding challenges; such plans are far from a "silver bullet." The

[13] The DB/DC contrast has parallels to the current funding arrangement for social security, in which surpluses have for decades been used to finance non-retirement functions of the federal government.

number of factors contributing to the DB plan's unfunded liabilities creates a situation of diffuse responsibility across institutions, however, making it difficult to devise solutions. On one hand, Michigan's legislature and governor have some blame for the increase in DB plan costs. Michigan, and some of its peers, remits contributions to public employee pensions that fall far short of the actuarially-determined, required amount. In the absence of above-average investment gains, this can harm a DB plan's funding level. Michigan's $521.7 million under-contribution from 1988 through 2011 represents 13% of the DB plan's unfunded liability, which stood at $4.1 billion at the end of 2011 (ORS 2011). Cumulative underfunding is greater still considering the state's indirect use of DB plan contributions for budget balancing. Michigan's failure to meet annual commitments has succeeded in providing short-term budget relief, but only by increasing unfunded liabilities and, ultimately, increasing DB plan costs.

State officials have less control over the second problem that can add to DB costs: poor investment performance. While investment strategy is developed by plan administrators and state treasuries, neither party holds significant influence over broader market behavior. Interest rates and long-term growth in the stock market are more influenced by federal macroeconomic policy than by any state-level action. Given heavy DB plan investments in bonds and equities, the plans represent an intriguing case of modern federalism. The effect on state budgets of federal tax policy changes has been explored elsewhere (Chernick and Reschovsky 1986; Gold 1992; Huefner, Cohen, and Weiss 1993), but as shown in the present study, federal economic policy may also have a less visible impact on state finances. Low interest rates that impair bond returns or burdensome regulations that hamper equity growth shape DB plan funding levels, which are tied to the cost of providing benefits to public employees. State budgets consequently

depend on pro-growth federal policy for both tax revenue and strong investment growth, factors that keep the cost of employee benefits in check.

Likewise, federal regulations that govern DB plan financing also affect state budgets. The General Accounting Standards Board is currently deliberating changes to discount rates (the assumed future rate of investment return) and the manner in which states determine and report plan liabilities. Each change could lead to increased costs to states, and employees in schemes where contributions are shared. According to a *Wall Street Journal* report, at least 27 state treasuries and 61 pension representatives oppose these changes (Chon 2010).

Normal economic cycles also influence DB costs and state responses to them by helping states in good times but hurting them in bad. DB plans, as currently structured, present state governments with a "feast or famine" outcome. During periods of strong economic growth like those of the late 1990s, in which investments return above average gains, unfunded liabilities tend to dissipate if not disappear altogether, and the overall cost of DB plans declines. When the economy slows or investments turn downward, unfunded liabilities usually rise, increasing annual pension costs. Of course, it is under such conditions that states experience an attendant drop in tax revenue while demands for public services rise (e.g., expanded unemployment claims and increased Medicaid enrollment), leaving the state that much less able to meet the increased pension cost.

DC plans offer states and municipalities a way out of this cycle. Base and matching contribution rates are determined by the legislature or state human resource agencies in conjunction with public employee unions, where present. Unlike DB plans, DC costs do not increase as a result of unfunded liabilities, investment volatility, or changes in federal policy or

regulations; instead, they are tied to base and matching contribution rates and gross salaries. DC plans offer public employers a modicum of control over one portion of public budgets that is otherwise absent in units that offer only DB plans, which have more variable, and unpredictable, annual costs. For taxpayers, DC plans for public employees remove the temptation that public officials will offer generous DB pension benefits but leave the plan underfunded (Johnson 1997).

It is important to note that divestment of public employee retirement benefits is not the only solution to the rising cost of those benefits. Modifying monthly stipends or cost of living adjustments can reduce annual costs and long-term liabilities, but such changes are not popular with public employees or their representative labor unions, and may not be politically feasible. Another option is for state governments and state employees to share the cost of annual pension contributions. As a state with a noncontributory plan, Michigan must pay the entire cost of providing a pension benefit to state employees. If Michigan were to halve the annual pension cost with employees, for example, the state's cost would decrease, shrinking the DC plan's cost advantage—if not causing it to reverse. That pension costs are shared between Michigan's public school employees and school districts has been offered as one reason why a DC plan for that group would not necessarily prove to be cost advantageous to the state (Summers-Coty 2009).

While much attention has been paid to the costs and liabilities associated with public employee pensions, some maintain that associated problems are not as severe as they have been made to look. Few would consider one individual who promises to pay another $100 over the course of 30 years to be in financial peril if the debtor's present assets were only $70 or $80, providing the debtor maintains an ability to earn additional funds in the future. Likewise, it is possible that the current difference between public pension funds' long-term obligations and

vested assets may not be in need of reform at all, given the ability of governments to tax and borrow to cover those obligations. Of course, these activities have an impact on local economies and the well-being of citizens, and may be politically unpopular if many must pay the cost of providing a benefit to a narrow segment of the population. Indeed, the issue of public employee benefits ultimately reduces to the much broader question of a government's competing responsibilities to the employees who deliver public goods and the citizens who enjoy—and pay for—those goods.

Finally, it is reasonable to view Michigan's experience and ask, if the state is better off, is anyone worse off? In this respect, Michigan is no different than private firms that replace pension plans with DC accounts. The savings accrued to employers who implement this and similar arrangements stem from the transfer of risk and financial responsibility from the employer to individual employees. This shift may help the employer's bottom line, but does so at the expense of employees' financial security in retirement. That is not to say employees with DC accounts are always worse off; many accumulate balances that provide a level of income above that offered by pensions, but this experience is far from guaranteed—a fact that cannot be overlooked.

2.9 CONCLUSION

This chapter has some limitations. Since DC accounts have been a reality for just 14 years in Michigan, one can only take a "wait and see" approach to truly evaluate the DC plan's eventual benefits, which will depend on contributions, salary levels, and future investment gains. Furthermore, the timing of Michigan's divestment policy limited the span over which DB and

DC cost comparisons could be made, and this issue should be revisited in years to come. Due to limited data, the administrative costs of both plans are also not treated explicitly here. All of the above limitations provide a strong genesis for future work.

In addition to administrative concerns about the relative cost of DB and DC plans, Michigan is an interesting case study for the politics of public sector pensions. The state's move toward DC plans resulted from a privatization-minded Republican administration with long-expressed concern for DB plan costs. The same governor also transferred dollars out of DB plan trust funds, a practice continued and arguably amplified by his Democratic successor. And the Michigan legislature was also complicit with several decisions related to the manipulation of the state's pension funds. But do these same institution- or partisan-motivated relationships exist outside of Michigan? The next two chapters attempt to answer that question.

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CHAPTER 3:

EXAMINING THE LINK BETWEEN STATES' POLITICAL AND FISCAL ENVIRONMENTS AND PUBLIC SECTOR PENSION FUNDING[14]

3.1 INTRODUCTION

American state governments have in recent years begun to confront the budgetary consequences of public sector retirement pensions. Investment market volatility and the loss of temporary federal fiscal relief combined with other resource availability pressures have increased attentiveness to pensions not only among policymakers, but also among public sector employees and their representative labor unions, journalists, policy analysts and the general public (CBO 2008; Chon 2010a, 2010b, 2010c; DiCamillo and Field 2009; Freudenheim and Walsh 2005; Lieber 2010; Powell 2011; Sanders 2010). Much of that collective interest is directed toward the long-term funding status of public sector pension plans, as well as the division of costs between public employers and employees, administrative aspects that harbor consequences for long- and short-term state fiscal sustainability. Beyond that, pensions and calls for reform have recently emerged as a polarizing issue on the landscape of American politics at both the elite and mass level.

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[14] A preliminary draft of this chapter was presented at the 69th Annual Meeting of the Midwest Political Science Association in Chicago, Illinois on April 1, 2011.

While public sector pensions are often described collectively as being poorly funded, in reality the plans' long-term fiscal health varies substantially across the states. A recent survey conducted by the Pew Center on the States (2011) reveals that in 2009, during the Great Recession, 31 states had already funded 80% or more of the pension benefits owed to current and future public sector retirees while their peers failed to reach the same threshold. According to Pew, this pre-funding measure, more commonly known as the pension funded ratio, ranged from a low of 51% in Illinois to a high of 101% in New York. In other words, Illinois has already invested roughly half of the projected cost of future pension benefits, while New York had slightly over-invested.

Scholars have yet to fully resolve the circumstances that lead to such interstate variation in the long-term funding circumstances of individual public sector pension plans. Some studies concentrate narrowly on determinants of investment policy and returns rather than funding levels (e.g., Eaton and Nofsinger 2001; Schneider and Damanpour 2002; Useem and Mitchell 2000). Those that do focus on overall funding levels reveal somewhat surprising relationships -- or a lack of them. Giertz and Papke (2007) rule out influence from several reasonable suspects, including retirement benefit generosity, cost of living increases, "early out" retirement provisions and the amount of employee contributions, but found per-capita state tax revenue was a fairly robust determinant of certain aspects of pension funding. In the same vein, a more limited study by Chaney, Copley, and Stone (2002) posits a relationship between pensions and state fiscal measures including balanced budget requirements, municipal bond ratings and tax revenues. Yet, Munnell, Haverstick, and Aubry (2008) maintain instead that certain plan structure characteristics are more prominent, albeit via use of a different methodology.

While the effect of broad political influences on pension funding has not been totally ignored by scholars, the results are ambiguous. A widely-cited piece by Mitchell and Smith (1994) finds no link between politics and pension funded ratios. Yet Johnson (1997) suggests that pension underfunding and Democratic state legislatures go hand in hand. More recently, Coggburn and Kearney (2010) find no relationship between states' political climates, measured using government ideology rather than partisanship, and public sector pension funding.

By skewing toward fiscal and structural determinants, and casting a theoretical net that is perhaps too wide or that is based on simulated rather than actual data (e.g., Butt 2012), existing studies have yet to resolve the presence or nature of any influences from states' political environments on public sector pension funding. This chapter advances a more comprehensive theory of public sector pension funding that includes political, economic and other state-specific measures and tests for their effect on two key dependent variables. The first, the funded ratio of public sector retirement pensions, has received a fair amount of scholarly attention to date, although not necessarily through a rigorously political lens. The second dependent variable, which measures the degree to which state governments and employees divide annual pension costs, has received little empirical scrutiny, despite being an issue of some contention in states like Wisconsin and Ohio.

The models estimated in this chapter offer at least two improvements on extant pension research. First, many studies lump all public sector plans together, mixing those that cover single- and multiple-employee groups (e.g., municipal pensions with state employee pensions), even though funding may be sourced from disparate sources. To some extent this is unavoidable, but the present chapter attempts to narrow the scope. Second, investigations tend to be carried

out over a limited timeframe, e.g. a regression analysis a single fiscal year's worth of data, but this chapter considers pension funding differences over the previous decade.

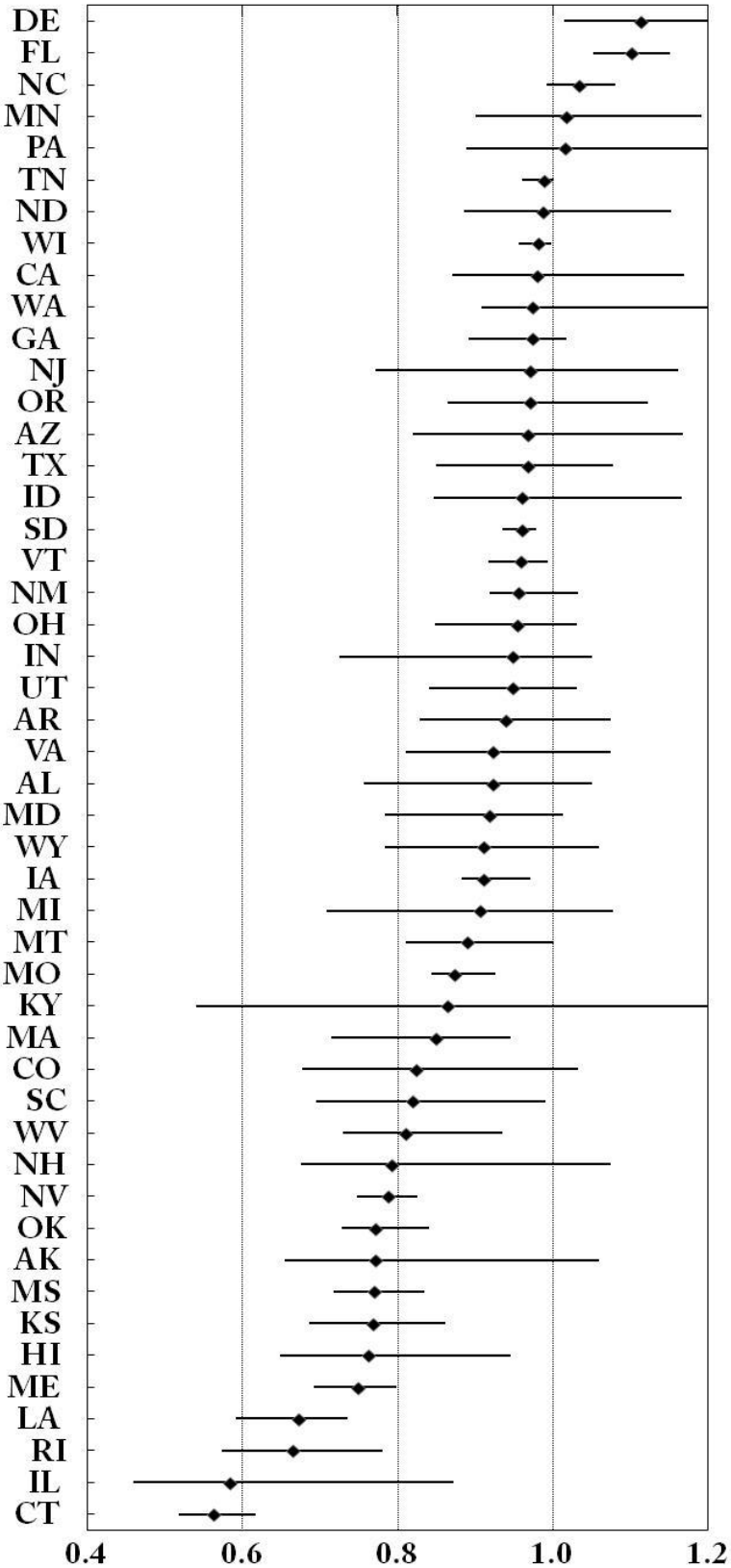
3.2 DEPENDENT VARIABLES

3.2.1 Pension Funded Ratio

The pension funded ratio is based on a straightforward "liabilities to assets" comparison. Pension plans render an annual approximation of the total future benefits that the plan will pay to participants (x) and also make regular valuations of the assets on hand to finance those benefits (y). The funded ratio is simply the value of y divided by x. If y exceeds x, the ratio is greater than 1.00, and the plan is said to be overfunded; conversely, if x exceeds y, the ratio is less than 1.00 and the plan is said to be underfunded. The funded ratio can also be thought of as both the degree to which a state has pre-funded a pension's future obligations and as an indicator of long-term fiscal sustainability. States operating plans with higher funded ratios, suggesting a greater portion of future benefits has been pre-funded, should have lower long-term pension expenses because there is less need to subsidize an underfunded plan. But states with lower funded ratios are likely to incur higher long-term pension expenses, because those states must continually finance the normal, ongoing cost of providing benefits plus subsidize any unfunded liabilities within the plan.

Utilizing the funded ratio as a dependent variable circumnavigates the difficulty of trying to evaluate assets and liabilities in different plans, which historically were not calculated in the same manner across the states, but have grown more uniform since the mid- to late-1990s (Mitchell et al. 2001; Steffen 2001). On the following page, Figure 3.1 displays recent variability

FIGURE 3.1. Mean and Range Pension Funded Ratio, by State, 2000 – 2008



in the pension funded ratio by state. The diamond on each bar indicates that state's mean pension funded ratio between 2000 and 2008, while each bar denotes the range.

There is considerable variability in funded ratios across the states and, indeed, within many of the states over the past decade. Just five states maintained average pension funded ratios above 1.0, while several others had mean values that approached 1.0. At the other end of the scale, Illinois and Connecticut had mean funded ratios below 0.6, indicating that between 2000 and 2008, these states had pre-funded on average less than 60% of expected future pensions costs.

Within-state variation can be traced to several factors, not the least of which was generally declining investment returns over the period of interest. Such losses, particularly from stocks and similar securities, tend to effect all pension plans since all plans invest a majority of contributions in the stock market. In fact, the mean pension funded ratio across the states declined from 0.987 in 2000 to 0.835 in 2008. Of course, some state legislatures are more proactive than others at attempting to rectify low funded ratios, perhaps through additional supplemental contributions. But as the previous chapter's case study of Michigan illustrated, other states may use public sector pensions as a "safety valve" to relieve budget pressure, e.g. via fund withdrawals or a failure to remit full annual contributions. Either of these activities has an adverse impact on pension assets without directly effecting pension liabilities, thus lowering the pension funded ratio.

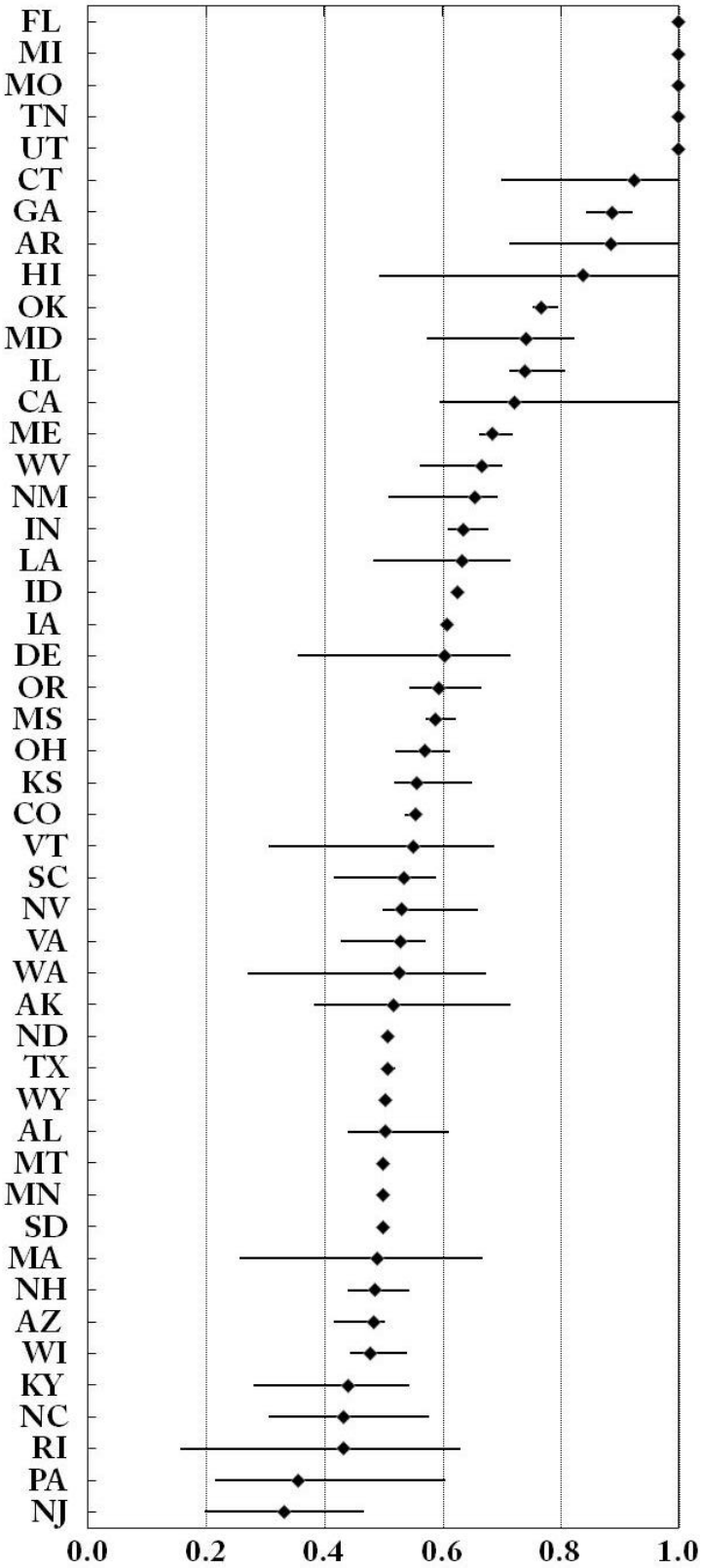
3.2.2 State Cost Ratio

While the pension funded ratio gauges the long-term fiscal health of public sector plans, and by extension that of sponsoring state governments, it says little about the comparatively short-term issue of how annual program costs are divided between governments and employees. This measure is worth considering in light of conflicts over public sector pension costs and their fiscal impact, a subject of public, acrimonious debate in Wisconsin, Ohio and other states. States that divide the costs with public employees are theoretically less susceptible to future fiscal stress caused by pensions than states that must finance close to, if not the entire, cost of the program because ongoing costs and any related increases are divided among multiple parties.

The decentralization of annual pension costs can be operationalized into a dependent variable which I term the state's cost ratio. For example, if in a given fiscal year a state's pension assessment is eight percent of employees' salaries while the employee contribution is four percent, then the state's cost ratio is 0.67. It does not appear that existing pension literature has employed the degree of pension cost sharing as a dependent variable, although some scholars have used employee pension contributions as an explanatory variable when studying variability in funded ratios.

On the following page, Figure 3.2 shows recent variations in state cost ratios between 2000 and 2008. Similar to Figure 3.1, the diamond on each bar indicates that state's mean cost ratio while each bar denotes the range of values over the same period. There is extensive variability in cost sharing and, again, within many of the states. But some caution is in order, as not all state data was reported consistently to the Council.

FIGURE 3.2. Mean and Range State Cost Ratio, by State, 2000 – 2008



Some of the factors tied with changes to the pension funded ratio, particularly external economic shocks or legislative decisions, likely contributed to some of the cost sharing variability within and across the states. The strength of public sector labor unions also dictates some states' relatively high, unchanging contribution share. In fact, five states – including Michigan – did not shift significant additional pension costs onto employees between 2000 and 2008; those states began and finished the decade financing 100% of annual contributions. Static cost ratios such as these can result from the timing of collective bargaining agreement negotiations or, as is the case with Michigan, result from labor agreements some years ago in which state-borne pension costs were granted in exchange for flexibility in other compensation matters (retirement age, workforce size, layoff avoidance, etc.).

3.3 THEORETICAL SETTING

How can differences across the states in pension funded ratios and cost ratios be understood within the context of those states' political and economic environments? To provide theoretical structure to empirical models of each dependent variable, I apply elements of Huber and Stephens' (2001) power resources framework and public choice. Comparative policy scholars have utilized the power resources approach to better understand the often divergent structure of welfare programs throughout the industrialized world, including old-age social insurance schemes. At its most basic level, this approach contends that policymakers' ideology affects their policy preferences for welfare programs and reforms, and that over time this effects actual welfare state development.

While the power resources model is often applied to central governments' welfare schemes, I argue that it can be applied to decisionmaking regarding public sector retirement pensions across the American states. At a fundamental level, public, centrally-managed old age income support programs and retirement pensions offered specifically to public sector employees are not truly dissimilar. In both, a governmental unit assumes ultimate responsibility for fulfilling benefit commitments, including an assumption of the financial risks necessitated by those commitments. Furthermore, both schemes are ultimately funded by tax dollars, and in most cases, both collect contributions from anticipated beneficiaries.

Where public sector pensions are concerned in particular, spending and funding decisions are rendered by legislative and executive bodies populated by elected officials. Indeed, it is vital to first recognize the discretionary nature of many programmatic aspects of public sector pensions before understanding how political and economic factors may shape funding levels and contribution policies. The stipends remunerated by pensions have long been criticized as little more than political symbiosis, as elected officials eager to provide tangible, material incentives to potential voting blocs may overextend the public sector's ability to finance the system. In less political and more administrative terms, states and municipalities have long reacted to fiscal stress by skipping pension payments, failing to render full contributions, altering appropriations formulas to reduce expenses, transferring dollars out of pension plans or some combination of these mechanisms (Adler and Sacco 1995; Eaton and Nofsinger 2004; Kiewiet 2010; Kogan and McCubbins 2010; Mitchell and Smith 1994; Munnell et al. 2008; Retkwa 1990; Schneider 2005).

More importantly, actions related to pension funding and reforms are fundamentally no different than those in other policy domains. Decisions are rendered by actors whose judgments are affected by a calculus involving their political philosophy about such programs and other electoral considerations (Downs 1957; Hou and Smith 2010; Peterson 1995). For decades, state policy scholars have documented the link between officials' policy preferences and policy outcomes in several contexts (cf. Key 1949). Witness suggestions that gubernatorial "smokestack chasing" is motivated by election results (Turner 2003), that state economic development policy is crafted around political calculations (Elisinger 1995) and the volume of research linking state policy output with partisanship, public opinion, interest group activity and political culture (e.g., Alt and Lowry 1994, 2000; Coggburn and Schneider 2003; Dye 1966; Fellowes and Rowe 2004; Jackson 1992; Jacoby and Schneider 2001; Lowry, Alt, and Ferree 1998; Moncrief and Thompson 1980; Plotnik and Winters 1985; Sharkansky 1968; Wood and Theobald 2003).

But what specifically might the contours of policy actors' preferences toward public sector pension funding look like? Without a doubt, American political parties have traditionally held divergent preferences for not only public sector pensions, but for the government's role as a provider of old-age social insurance in general. From the post-Civil War era to the creation of the federal Old Age, Survivor and Disability Income program to more recent efforts to reform social security with individual savings accounts, Democratic officials have publicly expressed support for maintaining the financial security of established public pension programs. Consequently, I anticipate that Democratic partisanship and/or liberalism at the state level should generally correspond to public sector pension funds of relatively superior long-term funding levels.

Yet institutional sensitivities cannot be overlooked (cf. Rothstein 1998). While executive and legislative actors tend to dominate other relevant policymakers at the state level (Ryu et al. 2008), Petersen (1995) suggests that legislators more than executives have a particular affinity for programs that offer concentrated benefits but diffuse costs. As a program that benefits a relatively small number of individuals while pooling the cost and risk across all taxpayers, public sector pensions may thus be more susceptible to legislative than executive influence. Yet this dynamic has received little attention in the extant pension scholarship.

However, partisan influences on social insurance programs tend to appear independent of other political and economic characteristics (Korpi and Palme 2003). The power resources framework holds that other conditions, such as the mobilization of effected groups (Esping-Andersen 1985, 1990; Sparks and Walniuk 1995), also affect policy outcomes. It is thus important to recognize that beyond partisan influences, the availability of financial resources and the presence of labor unions may have an effect on public sector pension funding. Higher voter turnout rates among union members cannot be overlooked (e.g., Radcliff and Davis 2000). For nearly a century, pensions have served as a fundamental aspect of compensation packages sought by labor unions on behalf of their members. Outside of direct negotiations, labor's pension advocacy has extended to support for candidates, typically liberals or Democrats, who share similar views on retirement programs. Democrats thus have an electoral incentive to maintain pension funding levels that gain the approval of union leadership and membership at large. This patronage-oriented relationship has yet to be fully resolved in the literature. I surmise that Democratic partisanship and/or liberalism, as well as stronger labor unions, will have a positive influence on a state's cost ratio.

To summarize, the structure of public sector pensions raises the possibility of politically-motivated treatment of the plans' long-term funding status and the annual division of costs between state governments and public sector employees. Democrats, more supportive of traditional pensions on philosophical grounds and in light of electoral incentives, are theoretically more proactive at ensuring the plans' long-term fiscal stability relative to their Republican counterparts, and are also more likely to advocate for a higher degree of state-borne pension costs, in light of labor union preferences. But officials cannot act unilaterally to achieve their desired goals; institutional and resource constraints may affect the intervening policy process. The next section details a series of independent variables that purport to explain variation in pension funded ratios and state cost ratios. This includes necessary measures of states political, economic and budgetary environments.

3.4 METHODOLOGY

3.4.1 Independent Variables and Data Sources

The notion that political parties matter to state policy outputs has strong evidence throughout the literature. To be sure, early (Dawson and Robinson 1963; Lewis-Beck 1977) and more recent investigations (Breunig and Koski 2009; Dilger 1998; Robey and Tajalli 1988; Weiher and Lorence 1991) question the existence of any robust partisan effect. However, other studies support the notion that such a relationship exists (Alesina and Tabellini 1990; Alt and Lowry 2000; Baber and Sen 1986; Fredriksson, Wang, and Warren 2010; Garand 1985; Key 1949; Kim and Berger 2005; Lizzeri 1999) and in particular that parties may affect legislative behavior more than ideology (Jenkins 2006). Partisan effects may be institution- and/or

domain-sensitive (Leigh 2008; May and Koski 2007), predicated on party competitiveness (Barrilleaux, Holbrook, and Langer 2002; cf. Brown 1995; Garand 1988; Jennings 1979; Riley 1971) or are simply not manifest in every state (Dye 1984).

I model partisanship of the state governor and state legislature, disaggregated by upper and lower chamber, to test their unique influence. Gubernatorial partisanship is coded with a dummy variable (1=Democratic governor, 0=all other partisan identifications) and I further include Beyle's ratings for gubernatorial power.[15] Legislative partisanship is entered as the proportion of total seats held by Democrats in each of the state's lower and upper chambers. Disaggregation is employed to resolve whether or not institution-specific effects are manifest. Based on the long-standing support of Democratic candidates by public employee labor unions—among members and elites—I hypothesize a positive relationship between Democratic governors and legislative chambers and both dependent variables.

Yet partisanship alone does not fully capture a states' political environment. I also include the Berry et al. (1998, 2010) measures of state citizen and government ideology.[16] Ideology may arguably be a more robust predictor of public sector pension funding than overt partisanship because party behavior across the states does not always follow the contours of expectations. Again, many moderate- to liberal-Republicans have worked to maintain the status quo when dealing with public sector compensation issues, while many moderate- to conservative-Democrats have voted to reform or replace traditional pensions with alternatives.

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[15] Ratings are available on Beyle's website (http://www.unc.edu/~beyle/gubnewpwr.html)

[16] Per the authors' instruction, I use the NOMINATE-based version of state government ideology instead of the ADA/COPE-based variant.

Theoretically, states with relatively higher degrees of mass and elite liberalism should exhibit increased tolerance of higher public sector spending, a portion of which is dedicated to finance public employee benefits, relative to more conservative states, which favor fiscal restraint (Alt and Lowry 2000; Nice 1986). While these measures have been used with success in several previous studies (Alt, Lassen, and Skilling 2002; Krueger and Mueller 2001; Langer and Brace 2005; Larimer 2005; Lax and Philips 2009; Shipan and Volden 2006; Shor and McCarty 2011; Soss and Keiser 2006; Soule 2004), there is a rigorous debate over the appropriateness of using interest group candidate ratings in the construction of state ideology (Groseclose, Levitt, and Snyder 1999; Herron 2000; Rabinowitz, Gurian, and MacDonald 1984; Snyder 1992; Erikson, Wright, and McIver 1989; Norander 2001; Wright, Erikson, and McIver 1985), although these correlate well with opinion-based measures (Carsey and Harden 2010).

The effect of labor unions on pension funding remains an open question. Chaney and co-authors' analysis (2002) included a measure of labor union presence among the state workforce, but the measure was of significance only in certain specifications, suggesting a relationship of questionable strength. While Mitchell and Smith (1994) find evidence of connection between unionization and certain aspects of pension costs (cf. Johnson 1997), related analysis by Aronson, Dearden, and Munley (2009) characterizes the effect of public employees on the structure of pension investments as "ambiguous."

In a departure from previous research, I use a different method for gauging the presence of labor union influence on state policy. Right-to-work (RTW) states are typically locales in which labor unions are less influential relative to non-RTW states (Mixon and Ressler 1993; Moore 1998; Palomba and Palomba 1971), with evidence that the employment environment is

different in states classified as such (Levin-Waldman 2002; Shermer 2009). Combined with the position of many labor union officials that RTW states generally have inferior employee benefits and lower salaries, this raises the RTW attribute as a possible component of pension funding variability. If labor rhetoric is true, then the connection between a state's RTW status and the funded ratio and state cost ratio should be negative. I control for whether or not a state has a RTW statute in force using a dichotomous measure (1=RTW state). Previous investigations that find a tenuous, if not non-existent, link between labor union influence and public employee pension funding have not used this particular indicator of labor strength.

I also model two indicators related to states' overall fiscal condition, revenue stress and debt stress. Both variables are calculated as the annual percentage change in per-capita state revenue and total outstanding state debt, respectively. Declining revenue (revenue stress) or increasing debt (debt stress) may influence pension funding; declining revenue and/or rising debt may prompt policymakers to withhold full fiscal support from public sector pensions in an effort to fully-fund other more visible and politically-popular resource demands, or require greater contribution shares from public sector employees. Both measures are important to include, given previous research connecting states' fiscal situation with pension funding (e.g., Chaney, Copley, and Stone 2002; Giertz and Papke 2007; Schneider and Damanpour 2002). To control for economic and fiscal differences across the states, I also include per-capita gross state product (GSP) and a dummy variable for whether or not a state has a statutory balanced budget requirement (1 = BBR in effect).

A number of states offer public sector employees a variant of a defined contribution, 401(k)-style retirement plan instead of, or in addition to, a traditional pension.[17] The presence of multiple retirement programs, and the concomitant existence of multiple retirement funding commitments, in an environment of scarce fiscal resources may have an influence on the funded ratio of existing pension plans as well as the division of costs between state governments and employees. Consequently, I include a dichotomous measure for whether or not a state maintains a defined contribution or similar plan alongside a traditional pension, hypothesizing that the relationship, if any, should be negative (1=Defined contribution plan or some variant in operation).

Finally, I control for the relative age of the public sector workforce by including the ratio of active to retired public sector employees. This variable is of some interest to pension funding, especially considering the parallel to Western social security programs which, as the population ages and fewer workers pay contributions into the plan, tend to experience greater funding stress. Giertz and Papke (2007) suggest pension plans with relatively greater numbers of active employees relative to retirees tend to have higher funded ratios than plans with a greater proportion of retirees.

Values for pension funded ratios and the ratio of active to retired workers were drawn from the Wisconsin Legislative Council's biannual Comparative Study of Major Public Employee Retirement Systems, which contains information on public employee pension plans

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[17] Pension alternatives fall into three categories: states that no longer allow pension enrollment and instead offer a defined contribution plan; states that require employee contributions to both a pension and a defined contribution plan; and states where employees choose between a pension, defined contribution, or "hybrid" plan.

from each state.[18] The remaining variables were available from public sources. Gubernatorial and state legislative partisanship were obtained from both Klarner (2003) and the United States Census Bureau's *Statistical Abstract of the United States*, along with figures needed to compute states' annual revenue and debt stress. Gubernatorial power and the state ideology measures were available from the respective authors' websites.

3.4.2 Panel Construction

The Council's data from 2000, 2002, 2004, 2006, and 2008 were used to construct a cross-sectional, strongly balanced panel of state employee pension funds.[19] This timeframe was preferred for the fact that state pension plans have adhered to financial reporting practices since 2000 that, as discussed previously, are considerably more uniform than those in prior years, lending credibility to the use of funded ratios reported by individual states over this period. Two states were eliminated from the panel: Nebraska, because its state employee pension fund is a defined contribution plan with no reported funded ratio, and New York, because the Council reports missing values for that state's funded ratios and subsequent efforts to determine the values were unsuccessful.

The Council's studies include data taken from pension plans that solely benefit local employees. This chapter's state-level theoretical frame necessitates exclusion of such "local-only"

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[18] The biannual studies are available at http://legis.wisconsin.gov/lc/publications/crs.asp

[19] Gubernatorial power values for some years were substituted because ratings are not available for each year considered. I use calculated ratings from 2000 and 2002; substitute 2005 values for 2004; and substitute 2007 values for 2006 and 2008.

plans, since funding is sourced at the municipal level and the relationship between state political indicators and local funding decisions is weak. Because an exclusion of "mixed" pension plans—for example, those that pool state employees with local employees or perhaps public school teachers—would have reduced the sample size to less than 20, such plans remain in the panel. This selection choice is not ideal and introduces some bias, but is the best possible way of assembling a panel given the often-shared constituency structure of public employee pension plans. Values for each independent variable's mean, standard deviation, maximum and minimum value are given in Table 3.1.

TABLE 3.1
Selected Descriptives for Independent Variables

Variable	Mean	SD	Max	Min
Gubernatorial Partisanship (D)	0.458	0.499	1	0
Gubernatorial Power	3.448	0.411	4.300	2.500
Upper Chamber Partisanship (D)	0.510	0.162	0.875	0.129
Lower Chamber Partisanship (D)	0.509	0.152	0.875	0.107
Right to Work Status	0.433	0.497	1	0
Per Capita GSP, log transformed	4.641	0.079	4.868	4.464
Revenue Stress	-0.001	0.170	0.743	-0.463
Debt Stress	0.045	0.106	0.795	-0.209
Citizen Ideology	51.523	16.791	95.971	8.45
NOMINATE Government Ideology	49.387	13.494	74.053	24.893
Defined Contribution Plan	0.225	0.419	1	0
Active to Retired Employee Ratio	2.245	0.607	5.640	0.550

3.4.3 Estimation and Diagnostics

A consequence of having a limited period of analysis over which to evaluate pension funded ratios that are determined in a consistent fashion across the states is that many of the

independent variables do not fluctuate significantly within each state. Yet, my key theoretical question concerns the covariate effects on pension funding across the states, where variability is considerably greater. As Savchak and Barghothi (2007) note in their analysis of decisionmaking by state supreme court justices, this suggests that a random effects approach is an appropriate methodological choice. Notably, random effects models generally offers more efficient parameter estimates (Kennedy 2003). Other modeling techniques are discussed below in section 3.5.4.

Prior studies utilizing the pension funded ratio as a dependent variable have relied on linear models to regress pension characteristics on selected covariates. Plots of residuals versus fitted values (not shown) advise that a linear functional form continues to be an appropriate modeling specification for this field. I correct for first-order serial correlation (Drukker 2003; Wooldridge 2002). Collinearity does not appear to be problematic. The highest Pearson correlation coefficient is, not surprisingly, between the upper and lower state legislative chamber partisanship variables. However, the associated variance inflation factors are between 3.0 and 4.0, less than the problematic levels described in methods texts (Belsley, Kuh, and Welsh 1980; Greene 2003; cf. O'Brien 2007).

3.5 RESULTS

3.5.1 Pension Funded Ratio

On the following page, Table 3.2 displays results for a random effects model that evaluates differences across the states in public sector pension funded ratios from 2000 through 2008. Coefficient of determination values indicate that this model explains approximately one-

TABLE 3.2
Determinants of Pension Funded Ratios within Panel of Public Sector Plans, 2000 – 2008

	β	SE	p-value	
Political & Policy Environment				
Governor (D)	0.008	0.032	0.789	
Gubernatorial Power	0.041	0.030	0.164	
Lower Legislative Chamber (D)	-0.383	0.140	0.006	***
Upper Legislative Chamber (D)	0.310	0.133	0.020	**
Right-to-Work State	-0.043	0.034	0.194	
Citizen Ideology	-0.002	0.001	0.007	***
Government Ideology	~0	0.002	0.851	
Economic and Structural Indicators				
Per-capita GSP, log transformed	-0.265	0.178	0.137	
Revenue Stress	-0.038	0.034	0.273	
Debt Stress	0.023	0.058	0.681	
Balanced Budget Requirement	-0.033	0.038	0.372	
Competing Defined Contribution Plan	0.018	0.032	0.566	
Active:Retired Employee Ratio	0.062	0.018	0.001	***
Model Statistics				
Constant			2.050	
Wald chi-squared			45.74	
Within R^2			0.277	
Overall R^2			0.233	
Sample Size			240	
Observations per State			5	
Panel Type			Strongly balanced	

Estimation Method: Panel random effects regression
Significance Levels: (***) $p \leq .01$, (**) $p \leq 0.05$, (*) $p \leq 0.10$
Notes: Results are corrected for first-order autocorrelation. Forty-eight states are included in the model; Nebraska and New York are the sole exclusions. The panel is strongly balanced with an equivalent number of observations for each state, one for each biannual period (2000, 2002, 2004, 2006 and 2008).

quarter of variability in funded ratios over this period. In general, results suggest that multiple aspects of states' political environments, as well as the age distribution within the public sector workforce, were key determinants of this aspect of pension funding, with no influence from several other economic or budgetary variables.

The political coefficients are perhaps the most interesting as the model suggests, consistent with at least one aspect of my theoretical framework, that there is in fact some institutional sensitivity to pension funded ratios. While neither gubernatorial Democratic partisanship nor the Beyle gubernatorial power is statistically-significant, both legislative chamber partisanship coefficients are strongly significant. This suggests, consistent with Peterson (1995), that programs like pensions -- which concentrate benefits but diffuse costs -- may be affected more by legislative than executive policy preferences.

The nature of each legislative coefficient reveals an even more intriguing phenomenon, one not anticipated. Whereas states' lower chambers have a negative effect on pension funded ratios, upper chambers have a positive influence, although the effect is of lesser magnitude. The net effect of Democratic legislative partisanship is negative (-0.383 + 0.310 = -0.073), a result which conflicts with the expectation that Democratic legislative partisanship in each chamber would have a positive effect on funded ratios.

An alternative to separate chamber variables is a single measure of mean partisanship across both chambers. Use of the latter in the model shown in Table 3.2 greatly reduces the model's explanatory power; the coefficient of determination drops from 0.233 to 0.141. In light of this difference, I believe the disaggregated approach is empirically and substantively superior.

Some caution is in order when interpreting the negative effect of Democratic legislative partisanship. Recall that each chamber partisanship variable was measured in a continuous fashion, i.e. the proportion of total seats in each chamber held by Democratic identifiers. Consequently, the additive legislative influence on funded ratios of -0.073 suggests that, *ceteris paribus*, a state with 100% Democratic legislative control would theoretically operate a public sector pension with a funded ratio 0.073 lower than a state with no Democratic legislators at all. Considering a more likely scenario, perhaps 50% Democratic control in each chamber, suggests a lower (-0.0365), but still negative, effect on funded ratios.

As with partisanship, coefficients for both state ideology measures reveal curious effects. While state government ideology has no significant link with pension funded ratios, the same cannot be said for citizen ideology, which has a negative effect. This suggests that states with a more liberal citizenry as captured by the Berry et al. measure, even after controlling for partisanship and various other factors, maintain public sector pensions with slightly lower funded ratios. Yet once again, the continuous nature of the citizen ideology variable means that the actual effect is quite small. Regardless, the directionality of citizen liberalism's effect dovetails with that for Democratic legislative partisanship; neither ideology nor partisanship has the hypothesized influence on pension funded ratios. Indeed, the nature of the influence across these measures confers some evidence of internal consistency within the model. It would be quite puzzling if Democratic partisanship reflected a negative influence on funded ratios but citizen liberalism did not.

Turning away from political factors, the strongly-significant and positive coefficient for the ratio of active to retired public sector employees indicates that states with comparatively

younger workforces have better-funded pension plans. In other words, those states with a higher proportion of active public employees to retired employees operate plans that are better positioned for the long-term. The magnitude of the effect is not necessarily large; moving from a 1:1 ratio to a 2:1 ratio, for example, improves funded ratios just six percentage points. Still, this relationship mirrors that of many national social insurance plans, where declining active-to-retired worker ratios are widely seen as contributing to those plans' fiscal deterioration, and suggests another point of compatibility between the policies at the heart of the power resources framework and public sector pensions.

Finally, the model indicates that none of the other economic or budgetary variables has an effect on pension funded ratios. There is no evidence that states' right-to-work status, per-capita GSP or the availability of a competing defined contribution retirement plan for public employees have a nonzero effect on the pension funded ratio. And despite theoretical and pragmatic expectations that pension funding is tied with state budgets, coefficients for revenue stress, debt stress and the presence of a statutory balanced budget requirement are non-significant.

The null results for these three fiscal variables was surprising and prompted further investigation. In addition to the specification detailed in Table 3.2, I tested an alternative model that included interaction terms between upper and lower chamber partisanship with both revenue and debt stress. Such terms would be a test of a slightly more nuanced hypothesis about the effect of partisanship on pension funding, that perhaps partisan effects are enhanced in some way as a state's fiscal environment changes. But none of these interaction terms was statistically-significant, either independently or globally. Thus, the partisan and ideological effects shown in

Table 3.2 are independent of revenue and debt stress, which themselves have no apparent influence on pension funded ratios during this period.

The non-sensitivity of pension funded ratios to balanced budget requirements is perhaps ultimately not surprising. In general, scholars have failed to agree on the effect of spending restrictive rules on state fiscal management. Several have presented evidence that such rules have a positive impact (Bohn and Inman 1996; Gosling 2009; Poterba 1994; von Hagen 1991), while others argue for a negative impact (Levinson 1998; cf. Krol and Svorny 2007; Levinson 2007), for no real influence at all (Abrams and Dougan 1986; Endersby and Towle 1997; Smith and Hou 2008), or simply state that this particular spending rule encourages higher debt levels (Break 1980; Mullins and Wallin 2004; Nice 1991). Where long-term public sector pension funding is concerned, there is no evidence of a positive, or negative, effect from balanced budget requirements.

3.5.2 Other Independent Variables of Interest

In addition to those displayed in Table 3.2, I tested several alternative conceptualizations of states' political and economic environments. The specific findings are omitted here for lack of substance, but the null result(s) are worth noting. A dummy variable for unified party control of state government was not a significant predictor of states' pension funded ratios, nor was a dummy variable for whether or not states' have legislative term limits. I also estimated a model using per capita tax capacity (i.e., total state tax revenue per capita) as another measurement of states' fiscal ability, but this variable ultimately had no statistically-significant relationship with the pension funded ratio. This result is a departure from some earlier findings (e.g., Giertz and

Papke 2007) that may be a relic of the specific, slightly longer time period evaluated here or may be the result of using a somewhat narrower sample of public sector pension plans.

I also found no evidence of a relationship between state bond ratings and the pension funded ratio. Despite long-standing usage of bond ratings as an economic indicator in state and municipal policy studies (Ridley and Simon 1943), this outcome may be evidence that a state's bond rating is simply an ambiguous or otherwise less than optimal measure of overall fiscal condition (cf. Kioko et al. 2011). Moody's Investor Services has only recently begun to consider unfunded pension liabilities when calculating states' debt burdens (Walsh 2011), and municipal bond ratings may prove to be a better predictor in the future.

Finally, several other measures of states' political environments were considered for the model specification outlined above but were ultimately excluded from analysis because the measures' were of limited compatibility with this chapter's period of interest. For example, the legislative committee power measure developed by Hamm, Hedlund, and Martorano (2006) is calculated only through 1999; Coffey's (2005) gubernatorial ideology scores are limited to 2000 and 2001; and Squire's (2007) state legislative professionalism index is calculated only for 1979, 1986, 1996, and 2003.

3.5.3 State Cost Ratio

A model similar to that displayed in Table 3.2 but with the state's annual cost share as the dependent variable is shown in on the following page in Table 3.3. In contrast to the model predicting pension funded ratios, the model focusing on the share of costs paid by state governments is a poor fit. None of the coefficients are statistically significant.

TABLE 3.3
Determinants of State Cost Ratios within Panel of Public Sector Plans, 2000 – 2008

	β	SE	p-value
Political & Policy Environment			
Governor (D)	-0.005	0.050	0.913
Gubernatorial Power	0.033	0.045	0.458
Lower Legislative Chamber (D)	-0.006	0.218	0.977
Upper Legislative Chamber (D)	-0.070	0.202	0.728
Right-to-Work State	0.052	0.053	0.319
Citizen Ideology	0.001	0.001	0.445
Government Ideology	0.001	0.002	0.745
Economic and Structural Indicators			
Per-capita GSP, log transformed	-0.412	0.272	0.129
Revenue Stress	-0.021	0.059	0.715
Debt Stress	-0.064	0.101	0.529
Balanced Budget Requirement	0.057	0.060	0.347
Competing Defined Contribution Plan	0.061	0.049	0.205
Active:Retired Employee Ratio	0.007	0.029	0.798
Model Statistics			
Constant			2.266
Wald χ^2			8.36
Within R^2			0.001
Overall R^2			0.084
Sample Size			240
Observations per State			5
Panel Type			Strongly balanced

Estimation Method: Panel random effects regression
Significance Levels: (***) $p \leq .01$, (**) $p \leq 0.05$, (*) $p \leq 0.10$
Notes: Forty-eight states are included in the model; Nebraska and New York are the sole exclusions. The panel is strongly balanced with an equivalent number of observations for each state, one for each biannual period (2000, 2002, 2004, 2006 and 2008).

The model leaves much to be desired. However, the null results for each variable yield evidence of relationships that are counterfactual to much of the contemporary debate, not to mention theoretical expectations, about how pension costs are shared between state governments and employees. Broadly speaking, a state's share of annual pension costs is in no way related to economic or budgetary conditions, a result that is surprising in its own right. But there are also no systematic links between partisanship or ideology and the state's cost ratio, suggesting that Democrats in state government do not correspond to higher state-borne costs or, conversely, that Republicans do not correspond to lower state costs.

3.5.4 Robustness Checks

Based on the nature of the panel data I contend that, given a relatively short time series, estimation approaches other than random effects models are inappropriate at this juncture. Concatenating the data into a pooled model would forsake the heterogeneity of states' political and economic environments, and a least-squares dummy variable or fixed effects estimation would reduce the already less than optimal sample size while potentially overwhelming the influence of the included covariates. This would adversely impact results for both models.

Regardless, I completed alternative model estimations for both dependent variables. A fixed effects iteration of the random effects model presented in Table 3.2, which estimated variation in pension funded ratios, was a poor fit, offering no evidence to suggest that any of the variable's coefficients differed significantly from zero. Likewise, a fixed effects iteration of the model presented in Table 3.3, which evaluated differences in state cost ratios, was also a poor fit.

I omit further details of these models due to a lack of fit. As time progresses and more data are available, however, alternative empirical approaches are worth pursuing.

In Table 3.4 on the following page, I show results for a pooled ordinary least-squares regression model for the pension funded ratio and state cost ratio. Durbin-Watson statistics indicated that neither estimation suffers from serial correlation. Each estimation reinforces aspects of the random effects model and suggests other potential, although sometimes statistically-weak, relationships. Similar to the random effects model, pooled results for funded ratios finds strongly-significant but opposing effects from states' upper and lower legislative chambers. But the magnitude of the net effect is larger (-0.157 versus -0.073). The pooled model also reiterates that the ratio of active to retired public sector employees has a positive effect on funded ratios. In contrast, the pooled model indicates a negative effect from per-capita GSP and balanced budget requirements. The substantive interpretation of these coefficients is that states with larger per-capita economic output, as well as those with statutory balanced budget requirements, maintain public sector pension plans with lower funded ratios.

The pooled model evaluating state cost ratios reveals five significant coefficients but very low explanatory power. Politically, the results indicate positive effects from gubernatorial power and a state's RTW status. Coefficients advise that a one unit change in the power variable increases a state's share of pension costs by nearly eleven percentage points, and that cost ratios in states classified as RTW are nearly nine percentage points higher. Cost ratios are lower in states with higher per-capita GSP, although balanced budget requirements and the presence of a competing defined contribution plan increase state cost shares by 6.8 and 13.7 percentage points, respectively. Altogether, these relationships are intriguing, but the pooled model's coefficient of

TABLE 3.4
Determinants of Pension Funded Ratios and State Cost Ratios within Panel of Public Sector Plans, 2000 - 2008, Alternative Estimations

	Pension Funded Ratio				State Cost Ratio			
	β	SE	p-value		β	SE	p-value	
Political Indicators								
Gubernatorial Partisanship (D)	0.020	0.033	0.548		0.018	0.053	0.728	
Gubernatorial Power	0.034	0.024	0.153		0.107	0.038	0.005	***
Upper Chamber Partisanship (D)	0.464	0.120	0.000	***	0.200	0.189	0.292	
Lower Chamber Partisanship (D)	-0.621	0.117	0.000	***	0.138	0.184	0.453	
Right-to-Work State	-0.037	0.023	0.111		0.088	0.037	0.018	**
Citizen Ideology	-0.001	0.001	0.225		-0.001	0.001	0.615	
Government Ideology	~0	0.002	0.800		-0.002	0.003	0.419	
Policy and Economic Indicators								
Per capita GSP, log transformed	-0.216	0.126	0.088	*	-0.355	0.198	0.075	*
Revenue Stress	-0.053	0.054	0.325		-0.072	0.085	0.397	
Debt Stress	-0.046	0.087	0.595		-0.059	0.137	0.669	
Balanced Budget Requirement	-0.047	0.024	0.053	**	0.068	0.038	0.074	*
Competing Defined Contribution Plan	0.034	0.024	0.162		0.137	0.038	0.000	***
Active:Retired Employee Ratio	0.095	0.017	0.000	***	-0.038	0.027	0.158	
Model Statistics								
Constant			1.753				1.189	
Adjusted R^2			0.235				0.089	
Sample Size			240				240	

Estimation Method: Pooled ordinary least-squares regression
Significance Levels: (***) $p \leq .01$, (**) $p \leq 0.05$, (*) $p \leq 0.10$
Note: Nebraska and New York were excluded from each model.

determination value indicates that over 90% of cost ratio variability remains unexplained even by these statistically-significant factors.

One final robustness check concerns the relationship of the dependent variables to each other. I tested the possibility that the pension funded ratio effects state cost ratio, and vise versa. Perhaps states with poorly-funded pensions have higher annual costs, and consequently share a greater degree of those costs with employees. Alternatively, perhaps states with lower cost ratios, suggesting employees must contribute more to pension plans, have higher funded ratios, since employee contributions are less discretionary and may contribute to higher levels of pension assets. However, the effect of state cost ratios on funded ratios, and of funded ratios on state cost ratios, was non-significant, even when estimated using a time lag of two years.

3.6 DISCUSSION

Public sector pensions have emerged as a polarizing issue with potentially harmful effects on state budgets in both the short- and long-term. But what can be said about the relationship between states' political environments and key metrics of pension funding? Aided in part by the power resources framework and elements of public choice, by the substantial literature connecting state politics with variability other policy domains and fed in part by hyper-partisan debate over public sector compensation issues, conventional wisdom holds that, if any systematic political influence is manifest, a Democratic and/or liberal presence in states should be positively related to long-term pension funding and the share of program costs paid by state governments. But such partisan influences may be moderated or enhanced by fiscal constraints or influence from labor unions, respectively.

The preceding analyses suggest this conventional wisdom has only limited empirical support. Outside of a poorly-fitting pooled model, there is no clear, systematic link between several state political measures and the annual share of public sector pension costs paid by state governments, a topic that has drawn attention in recent months from fiscal conservatives and liberals alike. This does not mean that isolated cases of ideologically-driven policy decisions do not exist, only that when judging the American states as a whole, one should avoid painting one political party or the other's elected members as more or less favorable toward the division of public sector pension costs between state governments and state employees. No broad influence appears to exist over the previous decade; whether or not such influences appear in the future remains to be seen.

On the other hand, there is evidence that politics does affect the long-term funded ratio of public sector pensions. Still, the influence exists only in a narrow sense. Coefficients representing gubernatorial Democratic partisanship and gubernatorial power had no statistical significance as predictors of pension funded ratios, while both variables measuring legislative chamber partisanship were significant, albeit with opposite signs. It appears that greater numbers of Democrats in states' upper chambers correspond to higher funded ratios, but that effect is overwhelmed by those Democrats' party peers in the lower chamber, with the net effect of both chambers approximately negative seven percentage points. These findings are sure to rankle labor union leaders who exhort the necessity of electing Democrats in order to protect public worker benefits, and those leaders' opponents, who complain Democrats do the bidding of public employee unions. Indeed, this also applies to findings related to the division of annual pension costs. Overall, there is no evidence of any consistent relationship across institutions

between Democratic partisanship or state liberalism and the funding of public sector retirement pensions.

What explains this dynamic? Conflicting sensitivities between legislative chambers and the state governor and policy outputs is not without precedent in the literature (Ka and Teske 2002; Wagner 2001), and Peterson (1995) suggests such sensitivity is likely where the policy in question offers narrow benefits but wide cost distribution. Gubernatorial-legislative interactions on fiscal matters have received much treatment (e.g., Abney and Lauth 2002; Barrilleaux and Berkman 2003; Dometrius and Wright 2010; Endersby and Towle 1997; Rose 2010) and are an understandably complex phenomenon in any single state, much less all 50. The sensitivity revealed in Table 3.2 may be related to professionalism (e.g., Clucas 2007; cf. Coggburn and Kearney 2010) or it may also be symptomatic of different fiscal philosophies prompted by reelection concerns between the chambers' memberships, a phenomenon documented at the federal level.[20] Perhaps Democrats in lower legislative chambers, who are subject to more frequent elections, are more attentive to short-term funding demands than long-term commitments such as public sector pensions relative to their upper chamber colleagues. Indeed, most public sector pensions have a substantial portion of future obligations already earmarked and invested—a condition that is rare in other policy domains at the state and federal levels where "pay as you go" financing tends to dominate.

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[20] According to Shepsle et al. (2009), the House of Representatives and Senate exhibit countercyclical behaviors with respect to appropriations. They argue that the Senate's electoral cycle seems to have an impact on that chamber's behavior; the Senate appropriates more projects and dollars to states which have an incumbent Senator up for re-election while the House appropriates fewer projects/dollars to states that have Senators up for re-election. Overall, the House "blunts" the Senate appropriations bias by two-thirds.

The preceding results also indicate that the long-term funded status of public sector pensions has no relationship to the size of a state's economy, revenue losses or increases in state indebtedness. It is not unreasonable to theorize that states with larger per-capita GSP have more resources available to better-fund public employee retirement programs, or that states with smaller economies may struggle to fulfill their commitments. But there is little evidence to suggest that such a relationship exists, perhaps because some states with large economies seem to have chronic problems funding pensions (e.g., California or Illinois) while some with smaller economies often seem to be better off (e.g., Southern or Mountain states).

While policymakers and journalists often link revenue and debt stress to public sector pensions, once again, I find no evidence of any relationships after controlling for other political and economic characteristics. This result is puzzling and is not easily resolved. The revenue and debt stress variables utilized in the models estimated in this chapter may be poor representations of the budgetary phenomena suspected to affect pension funding. Yet the failure of other financial measures (e.g., balanced budget requirements or bond ratings as discussed above) suggests that perhaps common budgetary variables are at best weakly related to public sector pensions. This may imply that the long- and short-term funding of public sector pensions is not as closely related to more immediate budgetary factors as theory and commentary would suggest, opening the door to other influences, especially those relating to the individuals making pension appropriations decisions. The non-significance of interaction terms between legislative partisanship and the budgetary measures suggests that the political influences are, in fact, independent of fiscal conditions.

In addition to political effects, the strong influence on pension funded ratios from the age of the public sector workforce cannot be overlooked, particularly in discussions of pension reform. This chapter confirms a result from prior studies, that states with younger workforces – i.e., states with relatively greater numbers of active public employees than retired employees – maintain pension funds that have already earmarked and invested a higher percentage of future benefit costs compared to states where the ratio skews told more retired employees. In this respect, states are no different than private sector employers or federal, age-based social insurance programs in that they cannot escape the fiscal consequences of demographic shifts. As birth rates decline and life expectancy increases, the financial situation of benefit programs targeted at old age beneficiaries tends to deteriorate. Policymakers would be wise to revisit the structure of these retirement programs—pensions and otherwise—all of which were conceived during a generation in which the employment ratios were much different. This is of particular relevance to the public sector, as roughly one-fifth of current state employees are expected to retire soon (Barrett and Greene 2005).

Unfortunately, this chapter leaves unresolved the effect of labor unions on public sector pension funding. Utilizing a state's right-to-work status as a proxy for labor policy strength, I find no link between unions and either pension funded ratios or state cost ratios. I surmise there are at least three potential explanations for this finding. First, my results may be indicative that right-to-work is a flawed indicator of labor strength, although studies making use of more traditional measures have failed to yield consistent results about the presence of any independent effect from labor on public sector pensions. This would explain the non-significant results in both models.

Second, the expectation that labor unions wield upward pressure on pension funded ratios in particular may simply be misplaced. Certainly, unions often negotiate or strike in order to win higher state cost ratios. But they rarely go to such lengths to ensure that future benefit costs are being temporally earmarked. This preference may be rooted in the history of unions' relative institutional incentives over the contrasting issues of benefit increases and long-term pension funding. Writing about labor positions in the early days of private pensions, Hacker (2002) states:

> "Not surprisingly, unions were less concerned about long-term financing, and many negotiated plans accrued significant unfunded liabilities. These financial risks actually tied workers more closely to unions, for the continued strength of union bargainers became the only guarantee of eventual benefits." (127)

While acknowledging that certain private sector unions, e.g. the United Auto Workers, were acutely aware of long-term funding challenges at employers like General Motors, Lowenstein (2008) provides similar perspective:

> "Unions recognized that if corporations were required to fund -- and not just promise -- pensions, they would be slower to increase benefits. ... Labor leaders, who were acutely sensitive to their own political interests, preferred to bargain for lavish benefits, even if unsound, over benefits that were more modest but secure. This explained a curious irony of the pension world. At nonunion sponsors, such as Kodak and IBM, pension funds were typically better funded than they were at unionized industries, such as steel, where organized labor was supposedly watching out for the workers' interests." (43)

From this vantage point, it is not ultimately that surprising that labor unions reflect no positive influence on pension funded ratios in this study or in certain others. But, contrary to what may be inferred from both authors' pension histories, neither do unions depress funded ratios.

That fact prompts the third possibility, that labor unions may simply have little or no influence on pension funding independent of the political variables already included in both models. More powerful unions may suggest higher proportions of Democrats in state office, higher levels of liberalism or both. As such, still another union indicator may not be strong enough to detect any effects not already captured by partisanship or ideology, suggesting the models in this chapter could be slightly over-specified. This, too, would explain non-significant results in both models.

Finally, some discussion of the applicability of a power resources and/or public choice approach to public sector pension funding is warranted. Both frameworks would envisage the presence of ideological influences on state cost ratios, and yet no evidence of such influences exists across multiple estimation techniques (random effects, fixed effects and pooled OLS). Nor is there any noteworthy influence from several state fiscal or budgetary factors. Collectively, these outcomes suggest that these theoretical approaches are perhaps ill-suited to explain certain broad pension-related funding phenomena, such as the share of annual costs paid by state governments on behalf of public sector employees. In the absence of political and budgetary effects, the most likely explanation for variability in this variable is localized, i.e. each state determines this according to endogenous conditions. Common factors across the states, if any exist, are simply not strong enough to capture empirical detection.

The frameworks do a comparatively superior job helping make sense of differences in long-term pension funding as indicated by the pension funded ratio. Partisan and ideological influences are indeed manifest across the past decade, although modest in size and in a direction opposite what one would theorize. A power resources view of public sector pensions suggests

that Democrats have philosophical affinity for pensions and should thus act to ensure the plans' long-term funding; public choice compliments this view, holding that Democrats have electoral incentives to vote in favor of stronger pension funding. But in fact, there is no empirical evidence that this is the case.

It follows that the possibility of changing ideological influences moving forward is very real. There is some incompatibility between the time period analyzed in this chapter, 2000 through 2008, and the polarization of public sector pensions as a policy issue, which probably began around 2008 and extends into the present. Thus, where partisan effects did not exist in the past, they may in the future; and where partisan effects were small or opposite expectations, they may grow or reverse. Only sustained study of public sector pension funding will be able to resolve these issues.

3.7 CONCLUSION

Public sector pensions do not suffer a lack of attention from the general public, journalists, policymakers, or professional analysts. Concerns have understandably been raised about the plans' impact on the fiscal sustainability of state governments. This situation, in turn, has raised interest in the antecedents of pension funding differences. Certainly, knowledge of such factors is necessary to foster a more comprehensive understanding of this emerging state policy issue, where recent debates are often constrained by ideology and blurred by emotion.

The preceding chapter presents evidence of a systematic, though limited association between states' political environments and state employee pension funding. The selected political indicators showed no relationship to the share of pension costs paid by state

governments, but successfully explained a portion of the variation in the long-term funded ratio of state employee pension plans. Of particular note were Democratic partisanship in each legislative chamber, state citizen ideology and the relative age of the state employee workforce. Politics, it seems, does in fact matter to some aspects of public sector pension funding.

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CHAPTER 4:

FACTORS DRIVING THE ENACTMENT OF DEFINED CONTRIBUTION PLANS FOR PUBLIC SECTOR EMPLOYEES

4.1 INTRODUCTION

Despite sustained financial support of public sector pensions, some policymakers and scholars expect the plans to remain underfunded, i.e. that plan assets will not keep pace with increasing liabilities. This has in turn prompted questions about the continued viability of public sector pensions and has raised calls for reform, particularly in light of the changing benefit landscape among private sector employers and the evolving demographics that have significantly altered the long-term feasibility of pensions and many national old age social insurance programs. However, incremental changes such as raising the retirement age or eliminating annual cost of living adjustments to benefit payments won't solve the long-term funding challenge for all public sector pensions (Novy-Mark and Rauh 2011), suggesting that more substantial policy shifts may be necessary.

Far removed from incremental reforms to traditional defined benefit (DB) pensions plans, defined contribution (DC), 401(k)-type accounts are an alternative vehicle for providing income support to retired public sector employees. Advocates contend that from a budgetary perspective, DC plans are advantageous to the short- and long-term fiscal sustainability of sponsoring public sector units (Beaulier 2011; Chapman 2008). In theory, the cost advantages of DC accounts accrue from two general differences between DB and DC plans. First, employer contributions to DC accounts, often at a rate established by the employer, can prove lower and

more stable when compared to DB pension costs, the latter having demonstrated extreme counter-cyclicality relative to the revenues available to finance benefit costs. Second, by divesting long-term investment risk to employees, DC plans impart no liabilities to public sector employers, circumventing the seemingly chronic issue of pension underfunding.[21] While administrative costs may potentially be higher under a DC scheme, if these costs are paid by employees, an employer can achieve even greater savings.

Most state and local governments continue to administer DB pensions for public employees, but there is growing diversity in retirement plan structure. Between 1996 and 2011, fifteen states enacted alternatives to existing DB pensions which make use of DC accounts, while others are considering whether or not to pursue similar changes.[22] These states are highlighted in Figure 3.1 on the following page.

As with many other public sector compensation issues, the pursuit DC accounts is often viewed in politically polarized terms. But the causal mechanism behind the enactment of DC accounts has yet to receive sufficient scholarly examination. Although economic, political and peer influences have a well-documented effect on the diffusion of policies from several other policy domains, their effects on public sector retirement reforms has not been fully explored.

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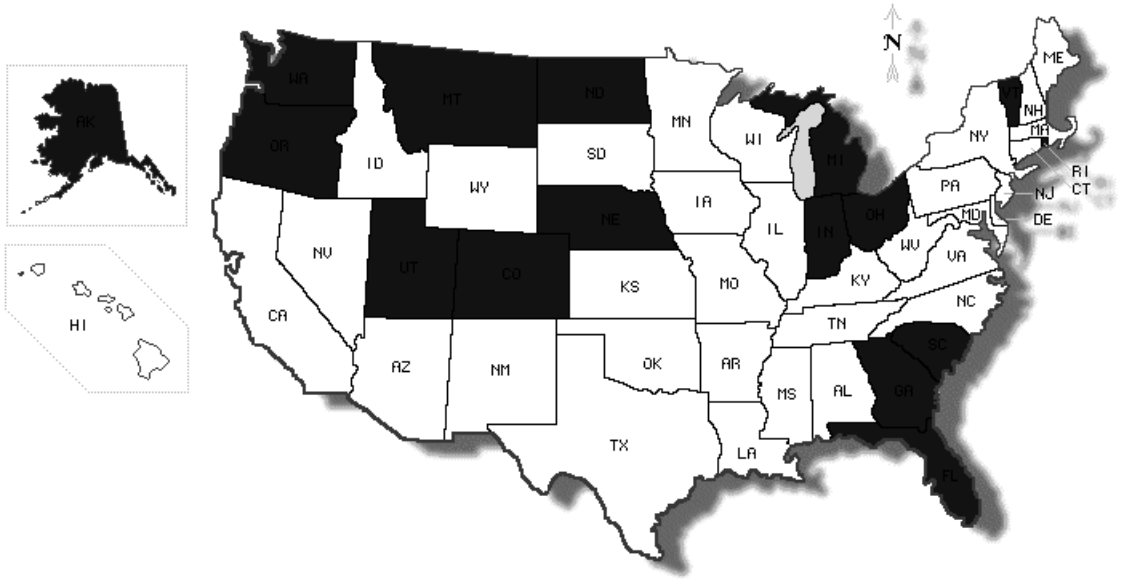
[21] DC plans arguably illustrate a classic moral hazard relative to traditional DB arrangements. State governments exercise discretion about how much risk the public sector will assume—in this case, very little—while divesting the consequences to state employees.

[22] Nebraska, a historical outlier, offered a DC plan from 1967 through 2002. In 2003, it was converted to a similar "cash balance" plan that guarantees an annual return of at least 5% and accepts contributions from both employees and Nebraska.

FIGURE 4.1
States Utilizing Defined Contribution Accounts for Certain Public Sector Employees



One exception is Munnell et al. (2008), who conclude that unified Republican control increased the likelihood of states' adoption of DC plans through 2006, with no impact from the existing pension plan's long-term funding condition or the generosity of retirement benefits. However, the authors say nothing about institution-specific effects, nor do they evaluate the possibility of influence from regional state behavior or from any other significant measure of states' political, economic or budgetary conditions.

This chapter seeks to explicate the process that has prompted a growing number of states to move away from DB pensions—programs that enjoy strong path dependency, often having been in operation for several decades—toward public sector retirement schemes which utilize DC accounts. My approach offers several improvements on existing scholarship. I direct a more critical eye to the role of states' endogenous political environments on the diffusion of DC

accounts, situating the phenomenon within a power resources framework. I also investigate the effect of fiscal stress and contagion influences on policy changes, utilizing data that include more recent legislative enactments. Finally, I employ a modeling strategy that recognizes the substantive differences in how states have aligned "new" DC accounts with existing DB pensions. Resultant insights of retrospective policy diffusion may further offer prospective guidance on how states will proceed with future reforms to public sector pensions.

4.2 DEPENDENT VARIABLE

Through the end of 2011, sixteen states have enacted DC accounts for some portion of the public sector workforce. While each program is somewhat unique, enacting states can be placed into one of three categories based on how the state has aligned "new" DC accounts with its existing DB pension. This categorization is shown in Table 4.1 on the following page.

"Mandatory DC Account" states have enacted legislation that requires some portion of the state workforce to enroll in a DC plan only; DB pensions are typically reserved for employees hired prior to a certain date. Relative to their peers, these states have transferred the greatest amount of risk to public sector employees. "Mandatory DC/DB Hybrid Plan" states require employees to contribute to both a DB pension and a DC account. Under this scheme, varying amounts of risk are shared between the public sector employer and employee. "DB, DC or Hybrid Plan" states give employees a choice between a DB pension, DC account or, in some instances, allow participation in both. Here, the employee is empowered to decide how much risk they wish to assume.

TABLE 4.1
States with DC Accounts for Public Sector Employees, by Arrangement and Year of Legislative Enactment

Mandatory DC Account	Mandatory DC/DB Hybrid Plan	DB, DC or Hybrid Plan Option
Michigan (1996)	Indiana (1997)	Vermont (1998)
Alaska (2006)	Oregon (2003)	Montana (1999)
	Rhode Island (2011)	North Dakota (1999)
		Florida (2000)
		Ohio (2000)
		South Carolina (2000)
		Washington (2000)
		Colorado (2004)
		Georgia (2008)
		Utah (2011)

Sources: Munnell et al. (2008); individual state websites
Note: Nebraska excluded; see Footnote 22

The fundamental difference between the second and third categories is that in the third, employees choose the plan in which they wish to participate, and thus exercise a choice over their personal risk assumption. Values for the dependent variable are based on this categorization: (1) DB, DC, or Hybrid Option; (2) Mandatory DB/DC Hybrid; and (3) Mandatory DC Participation.

4.3 THEORETICAL SETTING

Diffusion and innovation have long captured scholarly interest (Brown 1981; Davis 1930; Eyestone 1979; Rogers 2003; Savage 1978; Walker 1969), especially where state-level public policy activity is concerned (e.g., Haider-Markel 2001; Mintrom and Vergari 1998; Shipan and Volden 2006). A considerable portion of the literature understandably examines broad policy

issues, but a number of inquiries focus instead on the diffusion of programs that target the public sector (e.g., Kellough and Selden 2003; Moon and deLeon 2001). Studies generally posit new enactments as a product of internal political and economic conditions, external influence from neighboring jurisdictions or both (Berry 1994; Savage 1985). I hypothesize that factors from each category drive the enactment of public sector DC accounts.

Popular wisdom maintains that public sector DC accounts are favored more strongly by Republican than Democratic policymakers. Greenhouse (2011) summarizes the party dichotomy succinctly:

> "The push to switch to 401(k)-type plans comes overwhelmingly from Republicans, who see them as more individualistic and free market. Democrats generally oppose the change, partly because their union allies are eager to keep traditional plans."

This public choice view of the relationship between parties, pensions, unions and public policy is common. Due to campaign support from unions, Democratic officials have strong electoral incentives to maintain existing traditional pensions in the public sector; from another vantage point, Democrats have an incentive to vote against legislation which would modify or replace those pensions with DC accounts. And labor unions have a strong preference to maintain existing DB pensions if for no other reason than that the plans can be sold as a benefit of union membership.

Ideological disagreement about the relative merits of DB and DC schemes can also be traced to sharply different orientations toward risk and the believed-appropriate role of government as an insurance agent against the costs of advanced age. Building on Huber and Stephens' power resources framework (2001), Gran (2008) posits that members of conservative

political coalitions tend to favor retirement income support programs that minimize public sector risk and cost exposure, preferring instead that individuals assume primary responsibility their own retirement provisions (cf. Stinchcombe 1985). In contrast, members of liberal coalitions favor arrangements that prescribe a state-centric role for old age income distribution. In the post-New Deal United States, such beliefs about the role of government among right-leaning Republicans and left-leaning Democrats are influenced to some extent by concerns about the relative tax consequences of each general arrangement (Hicks 1999).

Regardless of ideological or philosophical motivation, the question of whether or not these partisan differences are reflected in observed interstate pension policy variation has yet to be sufficiently answered. Multiple studies have established that the partisan character of state legislative chambers and/or the state's executive branch affects various policies' likelihood of adoption (McLendon, Heller, and Young 2006; Patton 2007; Soule and Zylan 1997; Volden 2006). Others link normative beliefs with policy enactments outside the traditional "morality" domain (Olive, Gunasekara, and Raymond 2011) and connect state ideology to public sector benefit funding (Coggburn and Kearney 2010). Given Republican advocacy for programs that tend to minimize the public sector's risk assumption and costs and the party's common belief that public sector human resource management follow that of the private sector, I expect a positive relationship between Republican partisanship and the enactment of DC accounts. Policymakers belonging to a right-leaning, conservative party should favor such schemes because they reduce the public sector's exposure to risk while emphasizing individual responsibility and the utilization of a free market policy instrument.

Aside from political motivations, economic concerns may serve as a causal factor in the pursuit of DC accounts. Deteriorating state finances could be sufficient to open the proverbial "policy window" (Kingdon 2002) and give policymakers a stronger incentive—and political cover—to replace existing DB pensions with DC accounts. Intuitively, one may expect funding problems in existing pensions to serve as a catalyst for the policy shift, but Munnell et al. (2008) find no evidence of a systematic relationship. Thus, the fiscal antecedents of DC account enactment may lie from broader conditions, such as declining state tax revenue, increasing state indebtedness or both.

Diffusion studies have also explored the possibility that states seek to emulate programs from their neighbors. While the physical proximity of states does not necessarily impact all new policy adoptions (Bergin 2010; Miller and Richard 2010; Mintrom and Vergari 1998), and the mechanism of spatial diffusion is understandably complex (Boehmke and Witmer 2004; Jensen 2004; Mooney 2001; cf. McVoy 1940), proximate states nevertheless often exhibit congruent policy preferences (Bowman 2004; Bowman and Woods 2007; Foster 1978; Gray 1973). Enactments in one state may lead to policy learning in one or more of that state's neighbors (Case, Hines, and Rosen 1993; Lutz 1986; Seljan and Weller 2011; Stream 1999). In theory, one should thus expect the probability of DC account enactment to increase in a particular state if a neighboring state has already pursued a similar policy.

4.4 METHODOLOGY

4.4.1 Independent Variables and Data Sources

To gauge the partisan environment of state governments, I use separate variables for executive and legislative Republican partisanship and disaggregate legislative partisanship by upper and lower chamber. This conceptualization is necessary to clarify any institution- or chamber specific effects; based on the results presented in the previous chapter, such effects could well be present. Furthermore, the implementation of DC accounts essentially divests risk and substantial costs to individuals, and is consequently often judged as an instance of privatization (cf. Hacker 2004a, 2004b; Orenstein 2009); governors and legislative bodies may express different levels of enthusiasm toward this policy instrument (Wallin 1997), reinforcing the need to distinguish the institutions empirically. I measure Republican gubernatorial partisanship with a dichotomous variable (1=Republican governor, 0=All other party identifications). Legislative partisanship variables are calculated as the percentage of total seats in each house held by Republican identifiers as reported by Klarner (2003) and the *Statistical Abstract of the United States*. I also include a chamber interaction term. This term is a quantitative recognition of the institutional context in which legislative decisions are made (Brambor, Clark, and Golder 2006). While the upper and lower chambers are independent bodies, they often render decisions in an "interactive" manner; support for legislation in one chamber may be conditioned on support in the other chamber.

In addition to partisanship, I include the Berry et al. (1998, 2010) measures of state citizen and government ideology. Policymakers' ideology factors into the calculus of which programs they consider and pursue, especially when judging actions taken by previous adopters

(Grossback, Nicholson-Crotty and Peterson 2004). I hypothesize that states with more liberal populations and governments as measured by these variables will be less likely to enact alternatives to traditional pensions, desiring instead to maintain established plans that institutionalize risk to state government rather than to employees. Following Berry and co-authors' instruction, I include the NOMINATE-based state government ideology variable instead of the ADA/COPE-based version.

As a proxy for labor union strength, I include a dichotomous indicator of a state's right-to-work (RTW) status. RTW states are differentiated from non-RTW states in that union membership in the former is non-compulsory. Studies concerning other aspects of pension policy, e.g. funding differences, offer no consensus on the nature of union influence (cf. Aronson, Dearden and Munley 2009; Chaney, Copley and Stone 2002; Mitchell and Smith 1994). However, many approaches focus on unionization among the public sector only; a state's RTW status is rarely modeled as a covariate. I elect to use this broader measure of union influence. Unions in non-RTW states are theoretically less influential in policymaking, and thus less able to resist shifts away from the pensions that have historically been a staple of union-negotiated compensation packages. Thus, I anticipate any significant relationship between RTW status and the enactment of DC accounts should be positive.

I evaluate two measures related to states' overall fiscal condition, revenue stress and debt stress, based on data reported in the *Statistical Abstract of the United States*. Both variables are calculated as the annual percentage change in per-capita state revenue and total outstanding state debt, respectively. Declining revenue (revenue stress) or increasing debt (debt stress) may increase the likelihood that states seek to abandon the potentially high costs and liabilities of DB

pensions in favor of less risky DC accounts. In addition to these revenue- and debt-centric variables, I control for economic output using per capita gross state product (GSP).

In addition, I control for states' general spending orientation using the Jacoby and Schneider (2001, 2009) policy spending priority score. This measure gauges the extent to which states allocate revenue toward collective policy areas versus more particularized, welfare-type programs. I hypothesize that states with a relative preference for spending on non-specific, broad-based programs will be more likely to move away from DB pensions, which are highly particularized in their conferral of benefits.

Various other state-specific political indicators, though potentially linked to the diffusion of DC accounts, were excluded from the model because the measures' were of limited compatibility with the period of interest. The legislative committee power measure developed by Hamm, Hedlund, and Martorano (2006) is calculated only through 1999; Beyle's ratings for gubernatorial budget power are only available through 2001; Coffey's (2005) gubernatorial ideology scores are limited to 2000 and 2001; and Squire's (2007) state legislative professionalism index is calculated only for 1979, 1986, 1996, and 2003. As these and similar measures become more widely available, their inclusion in this model is worth consideration.

Finally, contagion effects remain a distinct theoretical possibility where the spread of public sector DC accounts is concerned. Beyond political or economic reasons, the shift away from pensions could be justified by policymakers as a response to action taken in one or more neighboring states. Lawmakers in state *X* may publicly advocate DC accounts not only on ideological or economic grounds, but also because state *Y* has already implemented a plan for their public sector workforce. Thus, I test two possible contagion effects. The first is a dummy

variable for whether or not a "new" enacting state borders a state that already has the exact same type of DC plan arrangement, as shown in Table 4.1. The second is less restrictive, a dummy variable which indicates whether or not an enacting state borders a state that has any of the three arrangements already in place.

4.4.2 Panel Construction

The period of analysis is 1996 through 2008, the timeframe over which all of the independent variables outlined above are available. During this period, 13 states enacted DC accounts. The truncated timeframe excludes data from 2009 or 2010, when no new enactments occurred, and 2011, when Utah and Rhode Island implemented DC accounts, although these states' enactments are treated in a more qualitative fashion in the Discussion section. Decisions concerning municipal retirement plans (e.g., plans for local police and fire protection employees) are often made at the local level and have a weak connection to the state-based theory pursued in this chapter. I exclude Nebraska as an outlier.

4.4.3 Estimation

Policy diffusion studies are dominated by use of event history analysis (EHA), also known as survival, duration, hazard, or failure time analysis. EHA is based on a proportional hazards model where the hazard, or probability, h a unit i faces at time t of experiencing a specified change can be expressed as follows:

$$h_i(t) = h_0 \exp(\beta_0 + X_i), \qquad h_0 \geq 0$$

where h_0 is the baseline hazard applicable to all units of analysis, increased or decreased by the components of covariate vector X_i. While popular in medical and engineering applications, EHA has been applied to several policy domains (e.g., Berry and Berry 1990, 1992, 1994; Chamblerlain and Haider-Markel 2005; Chen 2007; Dixon 2010; Doyle 2006; Gasiorowski 1995; Jensen 2003; Karch 2007; Medoff, Dennis, and Stephens 2011; Mokher and McLendon 2009; Shipan and Volden 2006; Tauras 2005). A parallel, growing literature about EHA's use across disciplines and software platforms has also developed (Allison 1984; Berry and Berry 1991; Blossfield and Rohwer 1995; Boehmke 2009; Box-Steffensmeier and Jones 2004; Box-Steffensmeier and Zorn 2001, 2002; Cleves 1999; Cleves et al. 2010; Therneau and Grambsch 2000).

I model the diffusion of DC accounts using a stratified Cox proportional hazards model (Cox 1972), a method used to clarify various political- and policy-centric research questions (Braun and Koopmans 2010; Cunningham 2011; Fredriksson, Neumayer, and Ujhelyi 2007; Kelly 2004). With respect to public sector retirement policy, this empirical choice was driven by three judgments about the underlying diffusion process. The first assumption regards the baseline hazard. As Buckley and Westerland (2004) and Jones and Branton (2005) note, it is advantageous to parameterize the baseline hazard as a function of selected independent variables, leaving the rate's distributional form unspecified. Jones and Branton affirm the benefits of this approach:

> "Substantively, this means that scholars can test how theoretically important covariates affect the chances that a state adopts a piece of legislation without having to make assumptions about the shape of the hazard rate. Thus, analysts avoid potential biases that may result from using a parametric model with a faulty distributional assumption." (424 – 425)

Given the inherently unpredictable nature of most political processes, leaving the baseline hazard unspecified *a priori* is a prudent modeling choice. This "semi-parametric" method characterizes the family of Cox proportional hazards models.[23]

Second, I assume that pursuit of DC accounts is a multi-destination process, where "destination" refers to prospective outcomes. Multi-destination processes are often described as "competing risks" problems because a unit of analysis is assumed to be at risk of experiencing one or more of several unique destinations (or outcomes).[24] As discussed previously, states have used DC accounts within three distinct scheme types; reduction to a binary indicator—often the standard practice in modeling single-destination problems—overlooks substantive differences between each arrangement; as Makse and Volden (2011) note, it is important to recognize unique policy outcomes. Furthermore, the adoption of one alternative does not eliminate the unit from making subsequent changes; in other words, each of the three alternatives "competes" for enactment. There is little reason to believe that once a state has adopted a hybrid retirement

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[23] Semiparametric models contrast with nonparametric models, which make no assumption about the baseline hazard and model no covariate effects (e.g., Aalen 1978; Kaplan and Meier 1958; Nelson 1972), and parametric models, which do specify the hazard rate a priori, assuming a Weibull, Gompertz, or exponential distribution function, for example.

[24] These problems are sometimes known as "stratified." But note that not all stratified problems are classified as competing risks, because a unit of analysis may only be at risk of experiencing ONE of several unique outcomes. And because states enact only one of three potential alternatives, not multiple alternatives in a single time span, an event count model would be inappropriate here.

scheme, for example, that the state could not later mandate DC accounts or, for that matter, return to a DB pension.[25]

Third, the standard Cox proportional hazards model assumes the baseline hazard is equivalent for each of multiple destinations—i.e., the probability of enacting one of the plans is the same for the other two plans—but this may or may not be the case. Depending on various factors, the political feasibility of enacting a plan where public employees are allowed to choose a retirement savings vehicle could be quite different from the feasibility of instituting a scheme with less employee flexibility. In contrast to the traditional approach, stratified Cox models, by stratifying the dependent variable, circumvents this assumption and allows for the estimation of a baseline hazard for each of the three disparate policy outcomes (in the equation above, h_0 would then be appropriately replaced with h_i). This may be the greatest advantage of the stratified approach, one which fosters compatibility between the model utilized to describe a public policy phenomena and the phenomena itself.

4.4.4 Diagnostics

Cox proportional hazards models assume that the hazard rates for two observations are proportional. It is also assumed that the proportionality is time invariant. Violation of these assumptions may bias coefficient estimates and consequently have an adverse effect on various

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[25] In 1991, public school teachers in West Virginia were transferred into a DC scheme; in 2009, they returned to a DB pension plan. Policy regarding public sector pensions is tightly linked with collective bargaining agreements, other contracts and even state constitutions, opening the door to the possibility for legal action over legislative changes. See also Footnote 2 on changes to public sector retirement plan structure in Nebraska.

statistical tests (Box-Steffensmeier and Zorn 2001; Therneau, Grambsch, and Fleming 1990; cf. Keele 2010), and ensuring that the proportional hazards assumption is not violated is of utmost importance if the model is to provide valid inferences. Violations are usually diagnosed with graphical methods or residuals-based tests, although the latter is more advisable. Significantly, the assumption must be verified globally and on per-covariate basis and, within the context of a stratified model, the assumption should also be verified for each strata. A global test alone may not capture violations nested within the independent variables or individual strata. I sought evidence of proportional hazards assumption violations using a test based on Schoenfeld (1982) residuals developed by Grambsch and Therneau (1994).

Three variables violated the proportional hazards assumption: lower chamber partisanship, government ideology and GSP. Violations of this sort may suggest the functional form of the offending variables is non-linear (Keele 2010), a condition I verified graphically.[26] Diagnosing the correct functional form of a non-linear covariate in stratified models is no easy task (Leon and Tsai 2004) and can involve considerable trial-and-error. Applying a square root transformation to lower chamber partisanship and a natural log transformation to government ideology remedied those variables' nonlinearities. Multiple quadratic modifications of GSP were unsuccessful, but transformation via a restricted cubic spline with four knots was successful.[27]

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[26] This method involves plotting martingale residuals from a null Cox model against values for the covariate of interest and then fitting a Loess smoother to the data. A nonlinear curve suggests the functional form of the covariate is also nonlinear.

[27] Within Stata, the knots are distributed according to percentiles recommended by Harrell (2001); see also Marsh and Cormier (2001).

Collinearity does not appear to be an issue within the given specification. States that have not enacted DC accounts by the end of 2008 are considered "right censored." Right-censoring of observations in a traditional EHA may lead scholars to treat those observations as missing, eliminate the cases from analysis altogether, or to employ a dyadic regression analysis; yet each of these adjustments leads to information loss that is necessary for a valid assessment of the underlying stochastic process, and are not issues with the stratified Cox proportional hazards model.[28]

4.5 EMPIRICAL RESULTS

I present results in Table 4.2 on the following page, reporting coefficients and robust standard errors clustered by state to avoid error correlation within units. Coefficients shown for lower chamber partisanship, government ideology and GSP reflect the transformations discussed in the previous section. As is the case with any stratified Cox proportional hazards model evaluating multiple policy outcomes, coefficients are the identical for each outcome while the baseline hazard rate for each outcome varies. It is not possible to plot the hazard rates over time with a stratified model. Plots based on the Kaplan-Meier (1958) estimator can be obtained but include no covariate effects and are therefore of limited utility.

The model yields empirical support for the theory that DC account enactment for public sector employees between 1996 and 2008 was motivated by certain state-level political and

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[28] See Tableman and Kim (2004) for a discussion of approaches to, and consequences of, censoring in event history data.

TABLE 4.2
Factors Affecting Enactment of Defined Contribution Accounts for State Employees, 1996 – 2008

	β	SE	p-value	
Political Indicators				
Gubernatorial Partisanship (R)	-0.945	0.932	0.311	
Upper Chamber Partisanship (R)	15.844	5.712	0.006	***
Lower Chamber Partisanship (R)	26.267	12.208	0.031	**
Upper*Lower Interaction	-45.280	19.876	0.023	**
Citizen Ideology	0.035	0.042	0.396	
Government Ideology	-2.986	2.601	0.251	
Right-to-Work State	-0.990	0.673	0.142	
Policy and Economic Indicators				
Policy Spending Priority	-2.639	3.904	0.499	
Revenue Stress	3.492	2.514	0.165	
Debt Stress	5.070	1.850	0.006	***
GSP	-10.607	8.722	0.224	
	-24.239	31.545	0.442	
	210.026	186.965	0.261	
Adjoining State Matching Policy	-0.245	0.785	0.754	
Model Statistics				
Wald chi-squared			43.16	
Log pseudilikelihood			-37.938	
Total Observations			1817	
Number of Enactments			13	

Estimation Method: Stratified Cox proportional hazards model
Significance Levels: (***) $p \leq .01$, (**) $p \leq 0.05$, (*) $p \leq 0.10$
Notes: Standard errors are robust and are clustered by state. Coefficients for lower chamber partisanship, government ideology and GSP are reflect transformations performed on raw data values; the chamber measure was transformed by square root, ideology with a natural logarithm, and GSP with a spline transformation that returns the disaggregated coefficients shown in the table. Forty-nine states were included in the estimation; the sole exclusion is Nebraska.

budgetary factors. Partisan rather than ideological sensitivity is apparent, as well as some institutional differences, continuing the pattern revealed in the preceding chapter. Neither government nor citizen liberalism is significant, suggesting that state ideology did not independently reduce the probability of enactment during this period.

Only the legislative branch, not the executive, had a systematic influence on enactment. Within the legislative branch, coefficients for both upper- and lower-chamber Republican partisanship are consistent; both coefficients are strongly-significant and, in a departure from the previous chapter's result, both are also positive. This initially suggests that proportionally-higher Republican populations in state legislatures increase the probability of DC account enactment.

However, the chamber-specific coefficients must be evaluated in concert with the interaction term. The presence of a negative and significant expression constructed from both chamber variables requires careful interpretation. At first glance, the interaction term's negative sign suggests that higher proportions of Republican legislative partisanship have a reductive effect on DC account enactment. To the extent that one would theoretically expect higher Republican populations in both chambers to increase the probability of enactment, the negative interaction sign is an unexpected outcome.

Because the model includes a multiplicative interaction term constituting two continuous variables, upper- and lower-chamber Republican partisanship, the three coefficients cannot be collectively interpreted as they would in a traditional linear-additive regression model (Brambor, Clark, and Golder 2006). Since the effect on enactment probability from one chamber (e.g., the state senate) is conditioned on the effect from the other chamber (e.g., the state house), marginal effects must be evaluated instead. This means considering the marginal effect of state house

partisanship on DC account enactment across observed values for state senate partisanship. In other words, as Republican partisanship in the state senate increases, does Republican partisanship in the state house increase the probability of enactment or not?

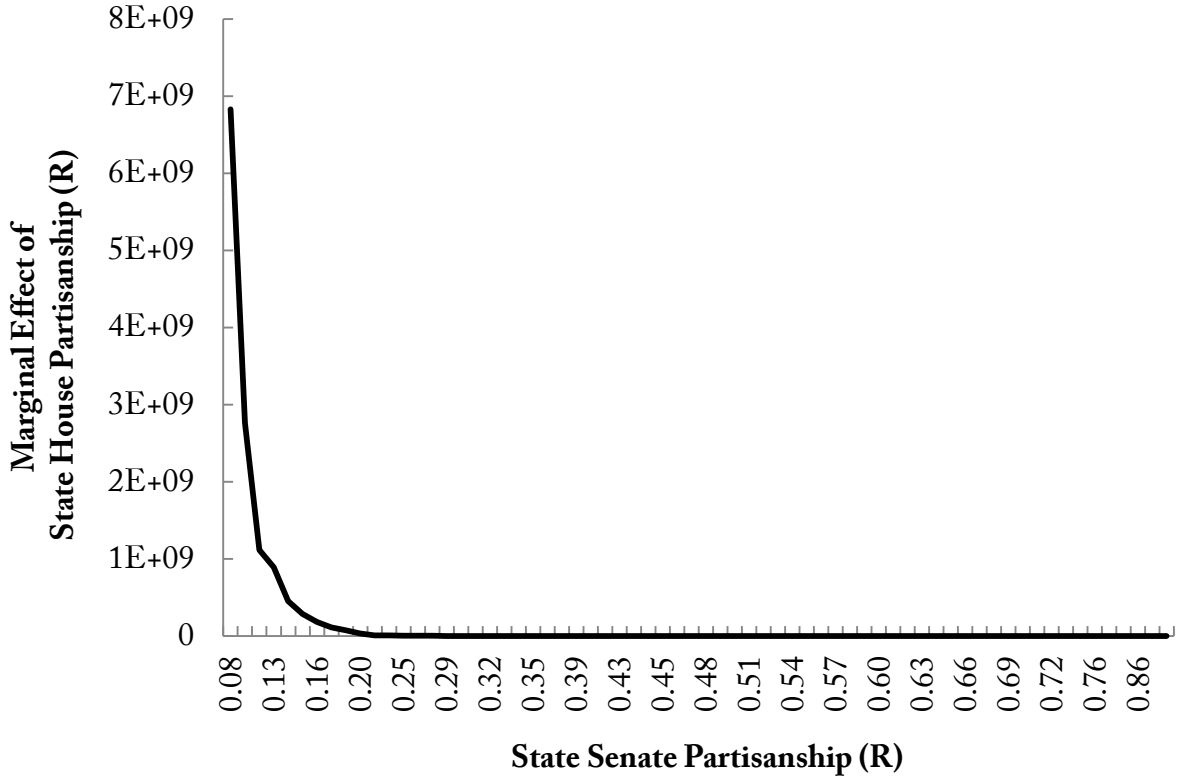
Such effects are shown in Figure 4.2 on the following page. The equation of the line is:

$$y = \exp(\beta_{House} + \beta_{Interaction}{}^{*}x)$$

where y = the marginal effect of state house partisanship on the probability of DC account enactment, x = proportion of seats held by Republicans in the state senate. The expression is modified by the exponential base per the standard Cox model. The x-axis of Figure 4.2 includes values of observed proportions of Republican identifiers in states' senates between 1996 and 2008, which ranged from a low of 0.08 to a high of 0.91 (mean = 0.486, σ = 0.161). Ninety-five percent confidence intervals are not shown, but the trend in marginal effects is the same; only the magnitude is shifted.

The figure reveals that the marginal effect of Republican house partisanship on the probability of DC account enactment declines with increasing Republican senate partisanship, but remains positive over all observed values of the latter. A non-included figure which plots the marginal effect of senate partisanship over increasing values for house partisanship shows similar results. The substantive conclusion is that, contrary to expectations, increasing Republican partisanship between state legislative chambers does not have an increasing, additive influence on the probability of DC account enactment. In reality, the marginal effect from one chamber declines to an infinitesimally small magnitude as Republican partisanship in the other chamber increases, but nevertheless remains positive.

FIGURE 4.2
Marginal Effect of State House Partisanship on Enactment of DC Accounts



One final word on the independent effects of legislative and executive partisanship is needed. While an informal tradition dictates that partisan legislative control be measured with a dichotomous or trichotomous variable, I ultimately found a continuous indicator disaggregated by chamber provided the most substantive results, following the pattern revealed in the previous chapter. Unified government, divided government and dichotomous party control measures were not statistically-significant modifiers of the probability of DC account enactments during the period of interest.

Most of the remaining policy and budgetary factors had no significant effect. There is no evidence of a connection between states' overall policy spending orientation or economic output

and the enactment of DC accounts. The right-to-work coefficient is also not significant, indicating that right-to-work states are no more or less likely to enact DC accounts for public sector employees than their peers.

Just one of the two fiscal variables, debt stress, was significant. The positive coefficient suggests that there is a strongly-significant relationship between increases in state debt and the probability of DC account enactment. Yet there is no causal association between declines in state revenue and enactments. The implication of these two results is that the movement away from pensions is perhaps motivated more by states' worsening long-term fiscal outlook than relatively short-term declines in revenue. Insofar as outstanding pension obligations are often characterized as debt, even if they aren't necessarily classified as such in an accounting sense, this result conforms to certain elite statements about the need to pursue DC accounts as an alternative to existing DB pensions.

Finally, there is no evidence of policy diffusion motivated by contagion pressure. Table 4.2 displays the coefficients for the contagion variable that indicated whether or not a state chose to enact a DC account scheme from the same category as that already enacted by a neighboring state. This variable is not significant. A coefficient representing the other possible form of policy learning from adjoining states, that a state doesn't necessarily enact the same type of scheme but any of the three possibilities, was also non-significant. Thus, the model provides no evidence to suggest that the enactment of DC accounts is a product of policy learning among geographically-proximate states.

The documented partisan and fiscal influences on the probability of enactments raises inevitable questions about possible interactions between these factors. For example, does

increasing Republican partisanship in an environment of increasing debt stress also increase the probability that a state will enact public sector DC accounts? An alternative specification of the model shown in Table 4.2, not shown here, was estimated and included various interaction terms to test this possibility, e.g. interacting chamber partisanship with both revenue stress and debt stress. All such interaction terms were not statistically-significant, suggesting no systematic joint effects between state legislative partisanship and changes in state revenue and debt metrics.

4.6 ROBUSTNESS CHECKS

An alternative event history modeling technique, one more common in the literature and less complex than a stratified Cox model, is a simple binary logistic regression of policy enactments over the period of interest. Applied to public sector defined contribution accounts, this approach treats all enactments the same; the dependent variable records no differences in the way states chose to arrange the accounts alongside existing pensions. I argue that there is a fundamental difference in public sector risk assumption between optional, hybrid and mandatory employee accounts, and for that reason, the stratified approach in which these policy options are differentiated and compete with one another for enactment is preferable. Nevertheless, logistic estimation is an apt candidate for a robustness check on the Cox model detailed in Table 4.2. On the following page, I present results for such an estimation in Table 4.3, using independent variables that are equivalent to those used in the Cox model.

TABLE 4.3
Factors Affecting Enactment of Defined Contribution Accounts for State Employees, 1996 – 2008, Alternative Estimation

	β	SE	p-value	
Political Indicators				
Gubernatorial Partisanship (R)	0.787	1.296	0.544	
Upper Chamber Partisanship (R)	36.676	20.788	0.078	*
Lower Chamber Partisanship (R)	39.927	20.072	0.047	**
Upper*Lower Interaction	-64.042	35.433	0.071	*
Citizen Ideology	0.005	0.035	0.890	
Government Ideology	0.018	0.066	0.781	
Right-to-Work State	-1.050	0.777	0.176	
Policy and Economic Indicators				
Policy Spending Priority	-2.218	4.692	0.223	
Revenue Stress	2.762	2.033	0.174	
Debt Stress	4.915	2.141	0.022	**
GSP	-6.485	3.217	0.073	*
Adjoining State Matching Policy	0.228	0.650	0.726	
Model Statistics				
Constant			2.421	
Log likelihood			100.163	
Cox and Snell R2			0.041	
Nagelkerkle R2			0.201	
Sample Size			543	

Estimation Method: Binary logistic regression
Significance Levels: (***) $p \leq .01$, (**) $p \leq 0.05$, (*) $p \leq 0.10$
Notes: Forty-nine states were included in the estimation; the sole exclusion is Nebraska.

This logistic regression model reinforces the conclusions drawn previously from the Cox model. Both chamber partisanship variables are positively related to enactment, although levels

of statistical significance are slightly lower. The interaction term is negative, indicating that this curious result was not merely a product of the Cox model. Debt stress remains strongly significant and positively related to enactment. In fact, the only substantive difference between the two models is the purported effect of per-capita gross state product, which was non-significant in the Cox estimation but in the logit model is weakly, but negatively, associated with enactments. This suggests that states with relatively larger per-capita economic output were less likely to enact defined contribution accounts, even after controlling for changes in revenue and indebtedness.

One valid criticism of the preceding analysis is the truncated period of analysis, one which terminates in 2008. This leaves un-modeled two years of non-activity where DC account enactment is concerned (2009 and 2010) as well as 2011, when Utah and Rhode Island both implemented new public sector retirement programs that make use of the accounts. Given the economic climate of 2009, and the mid-term election cycle in 2010, it is perhaps not surprising that state policymakers were focused on more pressing concerns than public sector retirement reforms.

But the more recent enactment in Utah and Rhode Island serve as a unique qualitative robustness check to the quantitative models presented above. Utah's pursuit of an optional DC account for some public sector employees largely conforms to the model; the state's legislature was dominated by Republicans at the time of legislative enactment. On the other hand, Rhode Island presents a more interesting case. In that state, support for a pension/DC hybrid plan came overwhelmingly from an independent governor (former Republican Lincoln Chafee) and state legislative Democrats, all citing concerns about Rhode Island's long-term indebtedness and

growing public sector pension liabilities. The state only partially conforms to the expectation of the model estimated in this chapter. Whether Rhode Island is simply an outlier, or the first instance of changing partisan orientations toward public sector retirement policy, remains to be seen.

4.7 DISCUSSION

Recent state-level budgetary stress has prompted often contentious debates over public sector compensation, including the cost of public employee retirement benefits. That discussion includes the matter of whether or not public sector employees should continue to receive traditional pensions when states are perceived as unable to fully-fund such programs and face fiscal pressures from several other policy responsibilities. One alternative to DB pensions are DC accounts, which can offer lower annual costs to sponsoring public sector units and, by divesting risk to individual employees, also eliminate future public sector liability exposure. By the end of 2011, sixteen states had enacted legislation mandating DC accounts for some public sector workers or had made the accounts optional. The diffusion of these accounts across the states presents a unique opportunity to study a polarizing issue within a theoretical outline incorporating both ideologically-driven policy preferences about governmental risk assumption and broader economic and political conditions.

Consistent with the power resources framework often used to explain variation in welfare programs across the industrialized world, evidence suggests that the nascent trend toward public sector DC accounts is indeed driven at least partially by the ideological preferences of relevant state policymakers. The preceding analysis of DC account enactments by American states

between 1996 and 2008 reveals that Republican legislative, but not executive, partisanship was a significant causal factor. Regardless of institutional differences, the results presented above are consistent with expectations for a political party dominated by economic conservatives and libertarians, which theoretically has a strong policy preference for schemes that minimize or eliminate the public sector's assumption of risk and future costs. In addition to political motivations, annual growth in indebtedness increased the probability that states would enact DC account legislation.

These results confirm a general theme within the policy diffusion literature—that political forces influence state policy enactments—although in the present study, the policy of interest effects public sector employees alone rather than the general public. But in contrast to a second theme of diffusion scholarship, this analysis offers no indication that states enact pension alternatives due to similar movement by adjoining states. Considering the somewhat clustered location of enacting states and the two possible mechanisms of policy learning explored, the nonexistence of any contagion effect is intriguing. The preceding results do not suggest that policy learning with respect to public sector retirement programs across the states has not occurred at all. Instead, there is little evidence, after controlling for salient features of the endogenous political and economic environment, that American states pursue public sector DC accounts after proximately-located states have already done so. This outcome is supportive of the hypothesis advanced by Volden, Ting, and Carpenter (2008), who contend that diffusion may instead be prompted by independent learning experiences.

But what experiences? The answer, at least where public sector retirement programs are concerned, may lie with the nature of retirement writ large. Public sector retirement policy is

distinguished from many other state policy concerns in that alternatives already exist, in varied forms, throughout the private sector. Indeed, 401(k) accounts had grown substantially in participation among private sector employers for nearly two decades before Michigan adopted a similar plan for new hires in 1996. Thus, one common theoretical strand of policy learning, that states seek to emulate their peers, may ultimately not be relevant when it comes to public sector retirement policy or perhaps other human resource issues. It seems more likely that learning occurs instead between the public and private sectors, with the former seeking to adopt a program already popular and/or successful in the latter.

Yet, the number of states with Republican-dominated legislatures since 1996 far exceeds the number of states that have moved state workers toward DC accounts, so related enactments are almost certainly the result of more complex influences than a Republican policy preference for state government to emulate the private sector. This fact receives partial confirmation in Figure 4.2, which indicates that increasing Republican partisanship in one house does not broadly increase the probability of DC account enactments, something that arguably calls into question the robust applicability of a power resources or public choice view where related legislation is concerned. One would assume the legislative calculus would include the state executive, but there is no evidence that governors have a nonzero effect on the enactment of DC accounts, a surprising finding given previous suggestions that governors may be more receptive to privatization schemes than state legislatures. One could view this result as tepid support for the notion that governors are less influential than the legislature when it comes to public sector compensation policy. Such a relationship would be similar to the executive-legislative dynamic

suspected to exist where budgetary issues are concerned, although a scholarly consensus has yet to form (cf. Abney and Lauth 1998; Dometrius and Wright 2010; Goodman 2007).

An alternative explanation is that Republican state executives are simply less driven by partisanship or ideology than their counterparts in the state legislature. This may also be true of Democratic governors. In fact, five of the 15 states with public sector DC accounts (Vermont, Indiana, South Carolina, Washington and Oregon) were led by Democratic governors during years in which legislation was enacted implementing the accounts. But none of those five states have enacted mandatory accounts. In these cases, Democratic governors may perhaps have served as a moderating influence, agreeing to adopt new retirement programs that resemble those in the private sector but without allowing state employees to be charged with full responsibility for their personal retirement savings. Conversely, those states with recently-implemented mandatory DC accounts (Michigan and Alaska) did so with nearly unified Republican governments. Ambiguous executive policy preferences may explain why, empirically, gubernatorial partisanship had no significant effect on DC account enactment.

Consistent with the a result documented in the previous chapter regarding pension funding, labor unions had no impact on the pursuit of DC accounts. Unions have long fought on behalf of traditional DB pensions, and against the replacement of those plans with DC accounts, in both the private and public sectors. But I find no evidence that unions had any effect on legislative enactments concerning DC accounts. This outcome may be a product of a poor independent variable -- a state's right-to-work status -- as a metric for labor union policy influence. Alternatively, the explanation may be consistent with one of the possibilities advanced earlier, i.e. that union strength is absorbed in higher proportions of Democratic legislative

partisanship, which does have a reductive effect on the probability of DC account enactment. Regardless, the model estimated above suggests that those who claim public sector employees in right-to-work states have inferior retirement plans do not stand on solid empirical ground.

Beyond politics, this chapter offers evidence consistent with elite discourse about the validity of DC accounts for public sector employees: that they are borne of fiscal necessity. DB pensions bestow on state and local governments variable, open-ended annual costs and, often, unfunded long-term liabilities. Theoretically, the pursuit of DC accounts could be motivated by revenue declines, which make it more difficult for states to finance annual pension costs, increases in outstanding debt, which add short- and long-term budgetary pressure, or both. However, evidence suggests the probability of DC account enactment was increased only by gains in state debt. The substantive implication of this finding is twofold; first, policymakers pursuing the accounts are not merely engaging in budgetary rhetoric, and second, future enactment of DC accounts is more likely to occur in states where outstanding debt is increasing.

4.8 CONCLUSION

Why have some states broken rank and moved portions of the public sector workforce out of traditional defined benefit retirement pensions and into plans with successively higher degrees of employee responsibility, such as mandatory defined contribution, 401(k)-style accounts? The preceding analysis makes use of theoretical expectations from both a power resources and public choice approach, particularly as they relate to ideologically-driven policy preferences about risk and electoral incentives governing public sector pensions. Empirical models indicate that Republican legislative, not executive, partisanship is the key determinant of

state-level enactment of public sector DC plans. This institutional sensitivity is similar to that found in the previous chapter, although here the party orientations conform more closely to theoretical expectations. There appears to be no influence from peer behavior, but increases in state indebtedness increase the likelihood that states will pursue DC accounts for public employees. The diffusion of new approaches to public sector retirement is worth watching to see if a contagion effect is ever manifest and to determine whether or not the partisan influences of the past endure in an ever-changing political and fiscal climate.

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CHAPTER 5:

CONCLUSION

5.1 SUMMARY

The contemporary debate surrounding public sector pensions can best be described as polarizing. In recent years, pension and other compensation-related conflicts exploded onto the political landscape in Wisconsin, Ohio, New York, California, Michigan and several other states. Many public employees, and others tangentially linked to the issue, perceived the treatment of pensions in hyper-partisan terms. Democrats were often described in the media and by supporters as fighting to protect existing public sector pensions and to keep employee contributions low while resisting efforts to dismantle or close existing pension plans. In contrast, Republicans maintained that they were merely attempting to modernize state balance sheets in an era of great fiscal stress, including increasing costs from unfunded pension liabilities, and changing workplace demographics. Regardless, the suggestion that state politics affects public policy outputs is nothing new to political scientists, but to date, few have studied the phenomenon in a robust fashion as it relates to public sector pension funding or the emerging trend toward defined contribution accounts.

Established theoretical frameworks provide clues about how to make sense of the potential for ideologically-driven public sector pension variability. The power resources approach to general welfare state evolution indicates that left-leaning parties have a preference for schemes that center risk and responsibility with public institutions. Applied to the American states, this suggests Democrats more than Republicans support traditional pensions over

alternatives and should thus work to maintain adequate funding in those pensions and resist efforts to replace them with defined contribution accounts. This preference is reinforced by certain public choice interpretations, which maintain that Democrats have additional electoral incentives to protect existing pensions, due to support from labor unions. But public sector pensions exist in neither a political nor economic vacuum. Other factors are certainly at play, including budgetary conditions.

The preceding chapters sought to clarify aspects of the often contentious environment surrounding public sector pensions. The Michigan case study illuminates not just the relative cost of defined benefit and defined contribution plans, but also how pensions are treated within a state's broader political and fiscal climate. By examining the role of factors including partisanship, ideology and contagion effects on funding differences across the states and on the diffusion of defined contribution accounts, the core empirical chapters succeed at making significant contributions to current deliberations over public sector benefits and to scholarship on public sector compensation and the intersection of state politics and policymaking. The latter, of course, is an enduring theme within the political and policy sciences.

Ultimately, I find that the popular and theoretical wisdom about pensions has, at best, limited basis in fact. Without question, Republican partisanship is the primary driving force behind the enactment since 1996 of alternatives to traditional pensions, including mandatory defined contribution accounts and programs that grant public employees a choice between pension, defined contribution or hybrid plans. However, only legislative Republican partisanship reflected any significant influence over this period, with both the upper and lower chambers displaying a positive effect on the passage of related legislation. Surprisingly, there was

no evidence of any significant effect from Republican governors. But other non-political factors were also at work. Gains in state indebtedness amplified the likelihood of defined contribution enactment, an empirical outcome that reinforces some elite rhetoric about the fiscal necessity of transitioning away from traditional, liability-bound pensions. This suggests that growing state debt may be a significant causal factor behind the future enactment of defined contribution accounts.

When evaluating pension funding differences across the states, the partisan view of public sector pensions clouds. For all the attention paid to policymakers' relationship to how state governments divide annual pension costs with public sector employees, a contentious issue in Wisconsin and Ohio that ultimately led to a recall election and a special referendum, respectively, I find no evidence that any partisan or ideological linkages to cost divisions existed over the previous decade. This finding was robust to multiple specifications and modeling techniques. While isolated cases of partisan bias in pension cost sharing may have occurred, there is no indication that such biases endure across time in a national sense.

Conversely, long-term pension funding did exhibit political sensitivity, but the effect is the opposite of what one may expect. Indeed, the net influence from Democratic state legislative partisanship on the funded ratio of public sector plans over the previous decade was negative. But once again, as with the pursuit of defined contribution accounts, only the legislative branch exhibited any pressure.

That state legislatures, not governors, affect both long-term pension funding and the enactment of alternatives suggests that perhaps this branch of government is more active on public sector compensation issues. Beyond that, it is difficult to argue that legislatures treat the

field in a consistently partisan or ideological fashion. Republicans drive the enactment of pension alternatives, but apparently do a superior job of ensuring the long-term fiscal health of existing pensions relative to their Democratic counterparts. Neither party can lay claim to shifting more costs onto employees, or more toward state governments.

At least one non-political, non-budgetary factor affects public sector pension funding. States with relatively greater proportions of active to retired employees maintain plans with better long-term funded ratios. This finding reiterates what should be common sense: political as well as workforce characteristics effect public sector pension funding. Funding differences are neither wholly political nor wholly structural, a fact policymakers would be wise to consider when developing reforms.

There are also a few clear-cut takeaways when comparing the cost of pensions to defined contribution accounts, a second objective of this dissertation. A case study of Michigan illustrates that under good economic conditions, traditional pension plans can offer retirement benefits at a relatively low cost to public sector employers. But defined contribution schemes in which public sector employers have significantly greater control over contribution levels and which present no long-term liabilities also present favorable fiscal benefits, especially considering the growing value of unfunded liabilities. While many employees may be no worse under a defined contribution plan, and some will certainly fare better, there are no guarantees that all employees will be better off.

5.2 IMPLICATIONS

Several implications can be drawn from the preceding analyses. First, the results underscore the body of extant research which links variation in state policy output to states' endogenous political environments, especially when the political environment is measured in terms of partisanship and is expressed separately for the executive branch and upper and lower legislative chamber. But there is a key difference. Whereas most scholars evaluate policy outcomes as they concern a segment of the public, here the effected clientele are the very individuals who produce and implement those public policies. This finding should spark additional lines of inquiry on the central question of whether or not political influences extend across all public employee groups or if such influences have a disproportionate impact on some more than others.

A second implication concerns the assembly of future state policy studies. While the social sciences have advanced to the point where innovative methods and metrics are considered vital to success and dissemination, as demonstrated in both chapters two and three, there are absolutely scenarios in which "old fashioned" measures such as the overt partisanship of policy actors are not only significant, but perhaps preferred to more nuanced indicators of political attitudes as those attitudes relate to observed interstate policy variation. This is significant for policy analysis in general, but also as it relates to public sector pensions, as some may wonder whether or not a public choice framework is an appropriate theoretical lens for this particular domain. At the same time, it is important to seek out and test the significance of indicators of states' broader policy environments, such as the spending-based measure utilized here. Careful consideration of all available covariates is a must if objective assessments of policy variation are to

succeed, especially when the subject matter garners substantial and often polarized public, special interest, and media attention.

Third, the analyses have implications for future policy diffusion research. Diffusion studies should continue to test the independent effects of relevant state political institutions on the enactment of new policies. Chapters three and four each suggest that the executive and legislative branches may have heterogeneous influences on pension funding and the enactment of alternatives. Scholars should also consider the partisan and contagion effects on programs that mainly effect the public sector. This may include other fringe benefits and human resource issues and can also be applied, depending on the availability of data, to municipalities. And scholars should recognize the utility of stratified models when seeking to answer policy questions in which the outcome may assume multiple forms.

Fourth, any future reforms to public sector pensions should consider decoupling benefit financing from politics. In an idyllic setting, pension funded ratios would have no connection with states' political environments. If pensions are offered to employees as a condition of employment, not electoral outcomes, then there is no reason that funding levels should demonstrate any systematic relationship with legislative partisanship. While Democratic legislative partisanship nationwide tends to depress funded ratios, the case study of Michigan illustrates that pension assets are subject to use for non-retirement purposes by elected officials from both parties. One alternative, again illustrated by Michigan and certain other states, is to phase out or replace existing pensions with defined contribution accounts. Individual ownership of retirement account assets certainly prevents political actors from using those funds for other

purposes, although not without potentially deleterious consequences for public sector employees and their families.

Alternatively, working within the confines of established pension plans, reforms would necessarily have to be incremental in nature. Based on the polarizing character of public sector pensions, a more conservative reform approach will likely enjoy greater political feasibility. This may include removing any discretionary element from pension appropriations. For example, forcing state governments to pay full annual required contribution amounts to public sector pensions. Alternatively, states could remove "loopholes" like the fund transfers carried out in Michigan that essentially divert pension funds toward general fund budgeting needs. But given widespread balanced budget requirements and expenditure limits, such reforms would force state policymakers to confront a tradeoff between the needs of public sector employees and the public at large—a tradeoff they are unlikely to seek or embrace.

Fifth, the case study of Michigan's defined contribution plan experience has broad applicability. The primary findings of slowed liability growth in the state's traditional pension plan and lower, more stable annual costs for its defined contribution plan are generalizable to other state and municipal governments. Cost comparisons outside of Michigan will depend, however, on how those governments share the cost of pensions with public employees and on the specific account contribution structure. In order to achieve annual cost reductions, the sponsoring unit must set base and matching contributions such that they are less than rates for the existing pension plan. A municipality may realize additional cost savings from slowing the growth long-term pension liabilities, which may keep the unfunded portion of those liabilities under control, but does not eliminate them. But parties looking to duplicate Michigan's

experience cannot overlook charges that may be incurred from divestment or the possibility of higher administrative costs for a new retirement plan, nor can they overlook the possibility that some public sector employees may be worse off under a defined contribution scheme.

The sixth and final implication deals with the relevance of the power resources and public choice frameworks, loosely defined, to public sector pensions. Huber and Stephens' application of power resources to welfare state development via a comparative, Eurocentric analysis may not at first glance strike as an appropriate theoretical choice. However, for reasons mentioned in the introduction to this dissertation, the social insurance programs that are very much a part of modern welfare states are not fundamentally different from pensions conferred on public employees. The policy preferences that have governed welfare state development globally do not disappear in American state capitals. Huber and Stephens contend that "political constituencies" act to defend existing welfare programs, and that longitudinal partisan trends affect those programs' development.

It is reasonable to suspect that similar patterns shape public sector pensions in the United States. Indeed, electoral incentives - e.g., Democratic defenses of traditional pensions to maintain labor union support - likely reinforce partisan preferences that already exist on a deeper philosophical level. The preceding analyses offer empirical support that partisan and ideological influences do contribute to differences in pension funding and plan availability across the states, although the nature of the influence is not always consistent with theory. That puzzling outcome is more appropriately traced to methodological issues or officials' failure to translate their preferences into consistent policy outputs than to a weakness of the power resources framework or public choice. Indeed, as more data are made available and pension funding and

policy choices continue to evolve, the field will be primed for further investigation with these, or other, theoretical approaches.

5.3 CONCLUSION

This dissertation illuminates at least three unresolved issues within public sector pension scholarship that are worthy of future investigation. The first is a determination of which variable(s) explain interstate differences in the annual share of public employee pension costs paid by state governments. Changes in how the cost is shared between public employers and employees is a matter of some interest to multiple parties, especially union leaders, union members, state budget officials, and even the general public. Having ruled out major political and economic variables, future work could focus instead on more specific, contextual factors. States may determine their share of annual pension costs in concert with neighboring states' policies, the broader labor market, or overall employee compensation, including gross salaries or the costs of health insurance and other fringe benefits. Analyses which attempt to model state cost sharing would do well to include such measurements, but with caution, as they are often highly variable within and between collective bargaining units and may thus be difficult and time consuming to obtain. While many state employees participate in a single pension plan, for example, those same employees' health insurance enrollment may be scattered across multiple plans, each with differing levels of coverage—no easy task to measure and compare across units, much less all the states.

The second concerns timing. The panel studies conducted in this chapter were limited to arguably short, post-1996 and post-2000 periods. The presence of the documented links, or lack

thereof, between politics and pension funding earlier than this period is hard to determine due to the lack of relevant legislative activity and different accounting methods, respectively, among the states. And whether or not these relationships will prove consistent in the future remains to be seen. Re-estimation of the models will be a worthy exercise as updated funding data is available, as more states enact pension alternatives, and as scholars continue to make available updated measures of states' political, policy, and economic environments.

And third, this dissertation largely overlooks a nevertheless important normative issue concerning public sector pensions – that of whether or not state governments or any public sector employer should guarantee employees anything once the employee has left the active workforce. While the private sector has moved away from post-employment benefit programs, many public sector units have not followed suit, and it is reasonable to inquire about and debate the appropriateness of this schism. Indeed, answering and justifying this question first – what public sector employers owe their employees – may circumvent much confusion and discontent when policies are crafted without due diligence to the philosophy underpinning said policies.